

REPLACEMENT
SHEET

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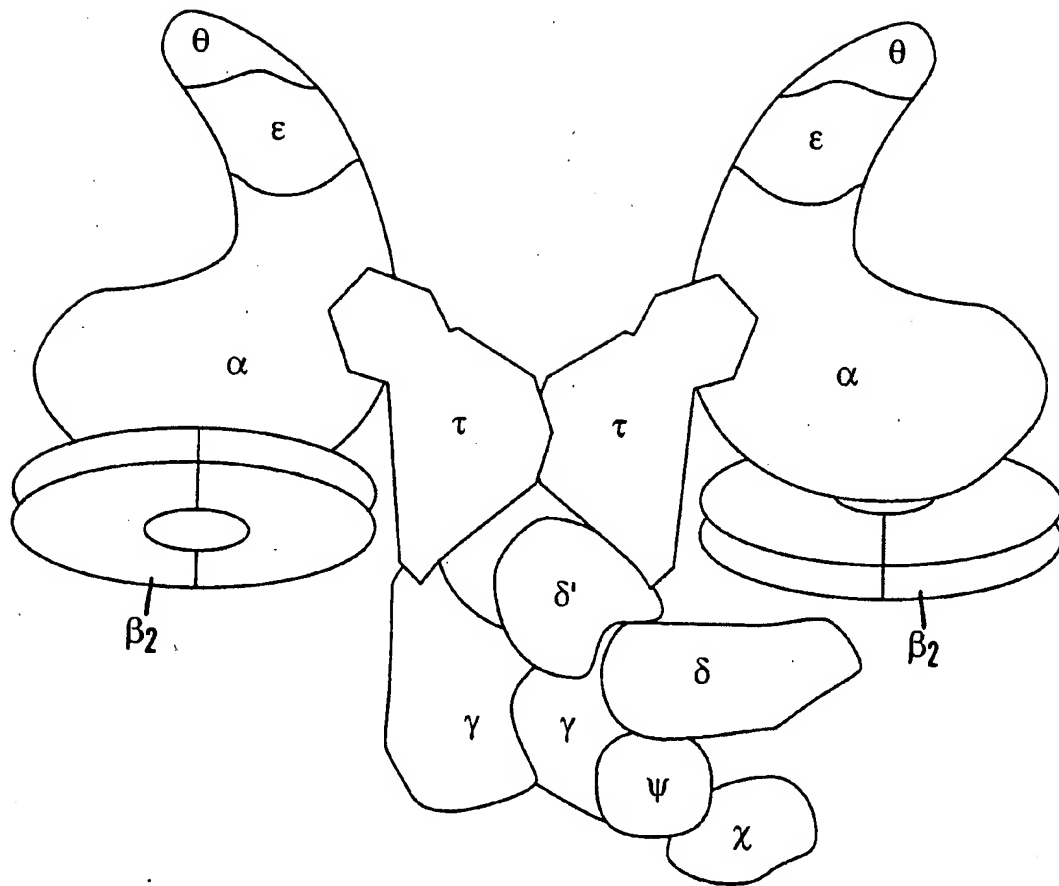


FIG. 1

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ATP binding

MSYQVLARKWRPQTFADVQGEHVLTA~~LANG~~LSLGR~~IHHAYL~~**FSGTRGVGKTSIARLLAK**
 MSYQALYRVFRPQRFEDVQGEHITKTLQNALLOK~~KF~~**SHAYLFSGPRGTGKTSAAKIFAK**
 ***** * * * * . * * * * . * * * * . * * * * . * * * *

GLNCETGITATPCGVCDNCREIEQGRFVDLIEIDAASRTKVEDTRDLLDNVQYAPARGRF
AVNCEHAPVDEPCNECAACKGITNGISDSVIEIDAASNNGVDEIRDIDRVKVFAPSAVTY
.***

KVYLIDEVHMLSRHSFNALL**KTLEEPPEHV**KFLLATDPQKLPVTILSRCLOFHLKALDV
KVYIIDEVHMLSIGAFNALL**KTLEEPPEHCIF**LATTEPHKIPLTIISRCQRDFDKRITS
.**.*****.*.*****.*.*****.*.*****.*.*****.*.

FIG. 2

E. coli
B. subtilis

E. coli
B. subtilis

E. coli
B. subtilis

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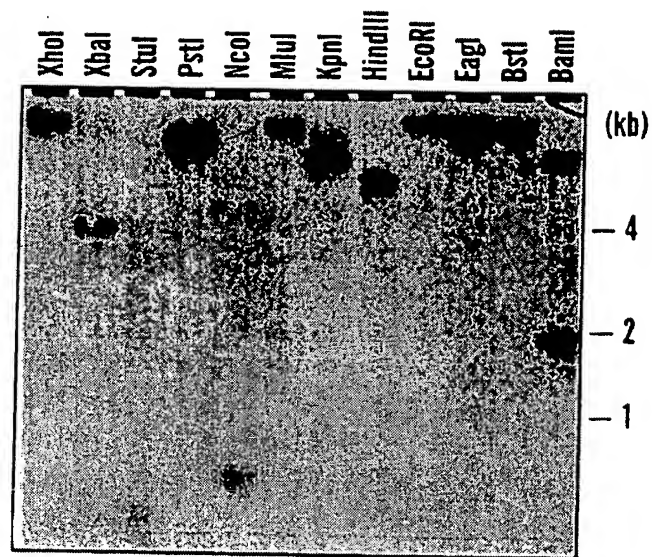


FIG. 3

REPLACEMENT SHEET

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TCCGGGGGTG	GGGTTCCAG	GTAGACCCCG	GCCCCCTCCCG	TGAGCCCCCTT	TACCCAGGCC	60
GCCACCTCCT	CCAGGGGGC	CAAGGCGTGC	AAGGAGAGGA	ACGTCCGCAC	CACGCCCTAT	120
ACTAGCCTT	GTG AGC GCC CTC TAC CGC CGC TTC CGC CCC CTC ACC TTC CAG GAG GTG GTG	met ser ala leu tyr arg arg phe arg pro leu thr phe gln glu val val	S.D.			180 (17)
GGG CAG GAG CAC GTG AAG GAG CCC CTC CTC AAG GCC ATC CGG GAG GGG AGG CTC GCC CAG	gly gln glu his val lys glu pro leu leu leu lys ala ile arg glu gly arg leu ala gln	CAC				240 (37)
GCS TAC CTS TTC TCC GGS AC						
GCC TAC CTC TTC TCC GGG CCC AGG GGC GTG GGC AAG ACC ACC GCG AGG CTC CTC GCC	ala tyr leu phe ser gly pro arg gly val gly val gly lys thr thr ala arg leu leu ala					300 (57)
ATG GCG GTG GGG TGC CAG GGG GAA GAC CCC CCT TGC GGG GTC TGC CCC CAC TGC CAG GCG	met ala val gly cys gln gly glu asp pro pro cys gly val cys pro his cys gln ala					360 (77)
GtG CAG AGG GGC GCC CAC CCG GAC GTG GTG GAC ATT GAC GCC AGC AAC AAC TCC GTG	val gln arg gly ala his pro asp val val asp ile asp ala ala ser asn ser val					420 (97)
GAG GAC GTG CGG GAG CTG AGG GAA AGG ATC CAC CTC GCC CCC CTC TCT GCC CCC AGG AAG	glu asp val arg glu leu arg glu arg ile his leu ala pro leu ser ala pro arg lys					480 (117)
GTC TTC ATC CTG GAC GAG GCC CAC ATG CTC TCC AAA AGC GCC TTC AAC GCC CTC CTC AAG	val phe ile leu asp Glu ala his met leu ser lys ser ala phe asn ala leu leu lys	C				540 (137)

FIG. 4A-1

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FIG. 4A-2

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GAG CGC CTC GCC CGC CGC TCC GAC GCC TTA AGC CTG GAG GTG GCC CTC CTG GAG GCG GGA	1140 (337)
glu arg leu ala arg arg arg ser asp ala leu ser leu glu val ala gly	
AGG GCC CTG GCC GAG GCC CTA CCC CAG CCC ACC GGC GCT CCT TCC CCA GAG GTC GGC	1200 (357)
arg ala leu ala ala glu ala leu pro gln pro thr gly ala pro ser pro glu val gly	
CCC AAG CCG GAA AGC CCC CCG ACC CCG GAA CCC CCA AGG CCC GAG GCG CCC GAC CTG	1260 (377)
pro lys pro glu ser pro pro thr pro pro arg pro glu ala pro asp leu	
CGG GAG CGG TGG CGG GCC TTC CTC GAG GCC CTC AGG CCC ACC CTA CGG GCC TTC GTG CGG	1320 (397)
arg glu arg arg ala phe leu glu ala leu arg pro thr leu arg ala phe val arg	
GAG GCC CGC CGG GAG GTC CGG GAA GGC CAG CTC TGC CTC GCT TTC CCC GAG GAC AAG GCC	1380 (417)
glu ala arg pro glu val arg glu gly gln leu cys leu ala phe pro glu asp lys ala	
TTC CAC TAC CGC AAG GCC TCG GAA CAG AAG GTG AGG CTC CTC CCC CTC GCG GAC CAT	1440 (437)
phe his tyr arg lys ala ser glu gln lys val arg leu leu pro leu ala gln ala his	
TTC GGG GTG GAG GAG GTC CTC GTC CTC GAG GGA GAA AAA AAA AGC CTG AGC CCA AGG	1500 (457)
phe gly val glu glu val val leu val leu glu gly glu lys lys ser leu ser pro arg	

frameshift site

FIG. 4B-1

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CCC CGC CGG GCC CCA CCT CCT GAA GCG CCC GCA CCC CCG GGC CCT CCC GAG GAG GAG GTA	1560
pro arg pro ala pro pro pro pro ala pro pro pro gly pro pro glu glu val	(477)
GAG GCG GAG GAA GCG GCG GAG GAG GCC CCG GAG GAG GAG GTC CGC CTC	1620
glu ala glu glu ala ala pro glu glu ala leu arg arg val arg leu	(497)
CTG GGG GGG CGG GTG CTC TGG GTG CCG CCG GGT ACT GGT ATA TAA	1680
leu gly gly arg val leu trp val arg arg pro arg thr arg ala pro glu glu	(517)
CCC CTG AGC CAA GAC GAG ATA GGG GGT ACT GGT ATA TAA	1740
pro leu ser gln asp glu ile gly thr gly ile *	(529)
CGACCTCGGA CAAGAGACCG TGGACAACAT CCTCAAGCGC	1820
GGTGCGGGGG CTCCAGAAAGA TGGTGGCCGA GGGCCGCCCC	1880
GATGACCGCC ACCAAGAAG CCATGGAGGC GGCGGCCACC	1940
GAACGTCTGC GCCGCCGAGG TCTCCGAGGG CAAGGTGAAC	2000
CGCCACCATG CTGAAGAACT TCATCTA	2027

FIG. 4B-2

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FIG. 4C

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FIG. 4E

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FIG. 4F

REPLACEMENT SHEET

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E.coli	MSYQVLARKWRPQTADVVGQEHVLTALANGLSLGRIHHAYLFSGTRGVGKTSIARLLAK	ATP site	60
H.inf.K.....II.....KDN.L.....F..		60
B.sub.A.Y.VF...R.E.....ITKT.Q.A.LQKKFS.....P.T....A.KIF..		60
C.cres.	DA.T.....Y.R..E.LI...AMVRT...AF.T..A..FMLT.V.....TT.....R		113
M.gen.	-MH..FYQ.Y..IN.KQTL...SIRKI.V.AINRDKLPNG.I...E.T...TF.KII..		59
T.th.	--VSA.Y.RF..L..QE.....KEP.LKAIRE..LAQ.....P.....TT.....M		58
	Zn ⁺⁺ finger		
	* * *		
E.coli	GLNCET-----GITATPCGVCDNCREIEQGRFVDLIEIDAASRTKVEDTRDLLDNVQYAPA		116
H.inf.	...VH-----V.....E.E..KA....N.I.....E.....K.V		116
B.sub.	AV...H-----APVDE..NE.AA.KG.TN.SIS.V.....NNG.DEI..IR.K.KF..S		116
C.cres.	A..Y..DTVK.PSVDLTTEGYH..S.IE..HM.VL.L.....DEM.E...G.R...V		173
M.gen.	AI..LN-----WDQIDV.NS..V.KS.NTNSAI.IV.....KNGIN.I.E.VE..FNH.F		115
T.th.	AVG.QG-----EDP.....PH.QAVQR.AHP.VVD.....NNS...V.E.RERIHL..L		112
E.coli	RGRFKVYLIDEVHMLSRHSFNALLKTLEEPPEHVKFLLATDTPQKLPVTILSRCLQFHLK		176
H.inf.	V.....I.....IGA.....CI.I...E.H.I.L.I...QR.DF.		176
B.sub.	EA.Y...I.....TAA.....P.A..IF..EIR.V.....QR.D.R		233
C.cres.	TFKK...IL..A...TTQ.WGG.....S.PY.L.IFT..EFN.I.L.....QS.FF.		175
M.gen.	SAPR..FIL..A...KSA.....P..L.VF..E.ERM.P.....TQH.RFR		172
T.th.			

FIG. 5A

REPLACEMENT SHEET

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E.coli	ALDVEQIRHQLEHILNEEHIAHEPRALQLLARAAEGSLRDALSLTDOAIASGDGQ--VST	234
H.inf.	...ET..SQH.A...TQ.N.PF.DP..VK..K.Q..I..S.....M..R.---TN	234
B.sub.	RITSQA.VGRMNK.VDA.QLQV.EGS.EII.S..H.GM.....L....SFSGDI--LKV	234
C.cres.	RVEPDVLVKHFDR.SAK.GARI.MD..A.I.....V..G....L....VQTERGQT.TS	293
M.gen.	KITSDL.LER.ND.AKK.K.KI.KD..IKI.DLSQ.....G....L..LAI.LIVKKL.LL	235
T.th.	R.TE.E.AFK.RR..EAVGREA.EE..L....L.D.A....E..LERFLLLEGP---LTR	229
E.coli	QAVSAMLGTLDDDDQALSIVEAMVEANGERVMALINEAAARGIEWEALLVEMGLLHRIAM	294
H.inf.	NV..N...L...NYSVDILY.LHQG...LL.RTLQRV.DAAGD.DK..G.CAEK...Q..L	294
B.sub.	EDALLIT.AVSQLYIGK.AKSLHDK.VSDALETL..LLQQ.KDPK.IED.IFYFRDMLL	294
C.cres.	TV.RD...LA.RS.TIA.Y.HVMAGKTKDALEGFRALWGF.ADPVVMLDV.DHC.AS.V	353
M.gen.	MLKKHLISLIEMQNL.L.KQFYQ.I	260
T.th.	KE.ERA..SPPGTGVAEIAASLARGKTAELG.ARRLYGE.YAPRS.VSGL.EVFRGLY	289

FIG. 5B

REPLACEMENT SHEET

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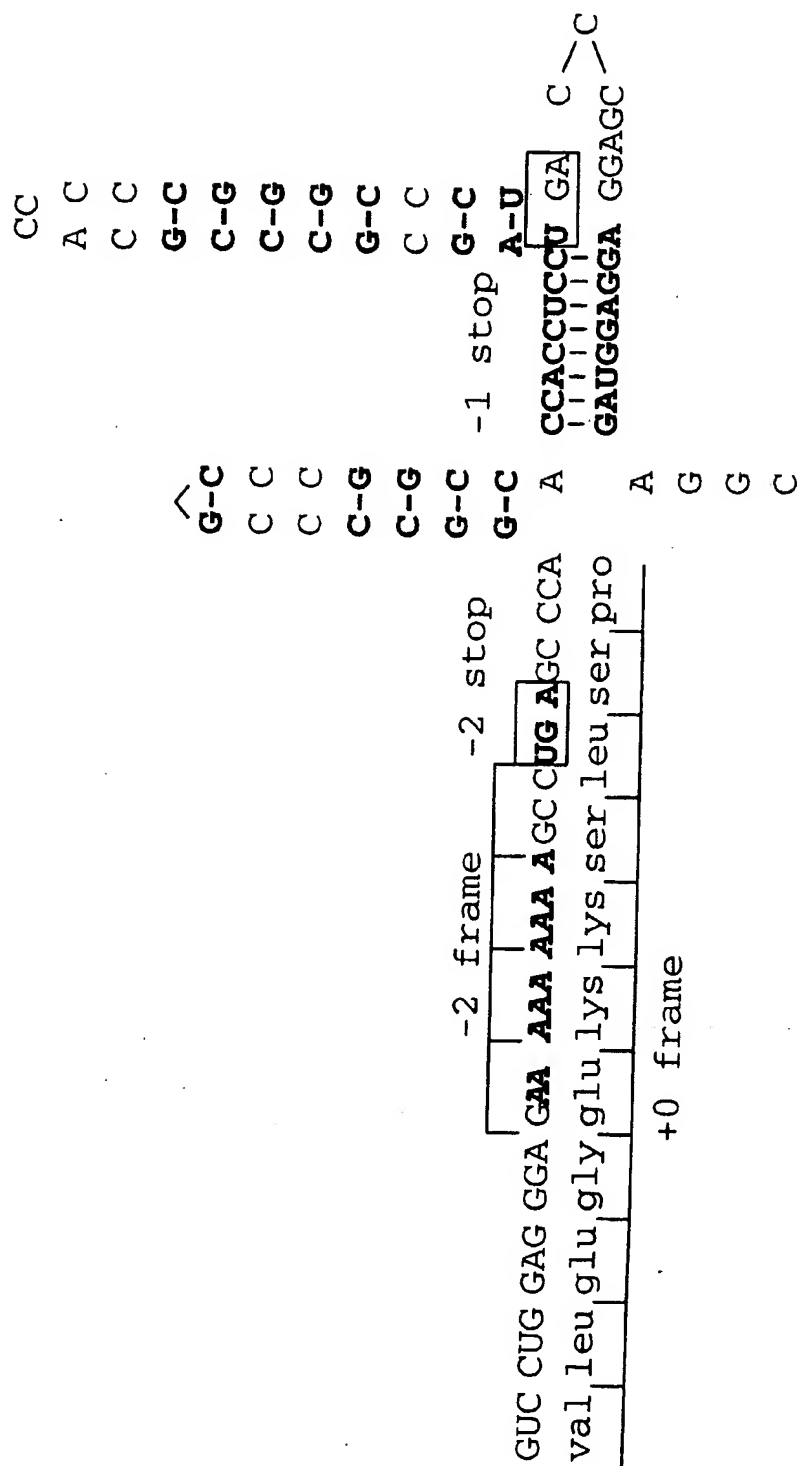


FIG. 6

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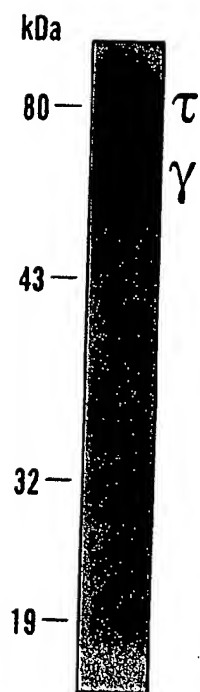


FIG. 7

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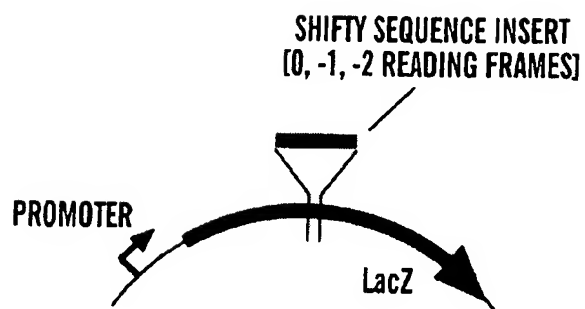


FIG. 8A

	READING FRAME	BLUE	WHITE
SHIFTY SEQUENCE	0	+	
	-1	+	
	-2	+	
MUTANT SEQUENCE	0	++	
	-1		+
	-2		+

FIG. 8B

REPLACEMENT SHEET

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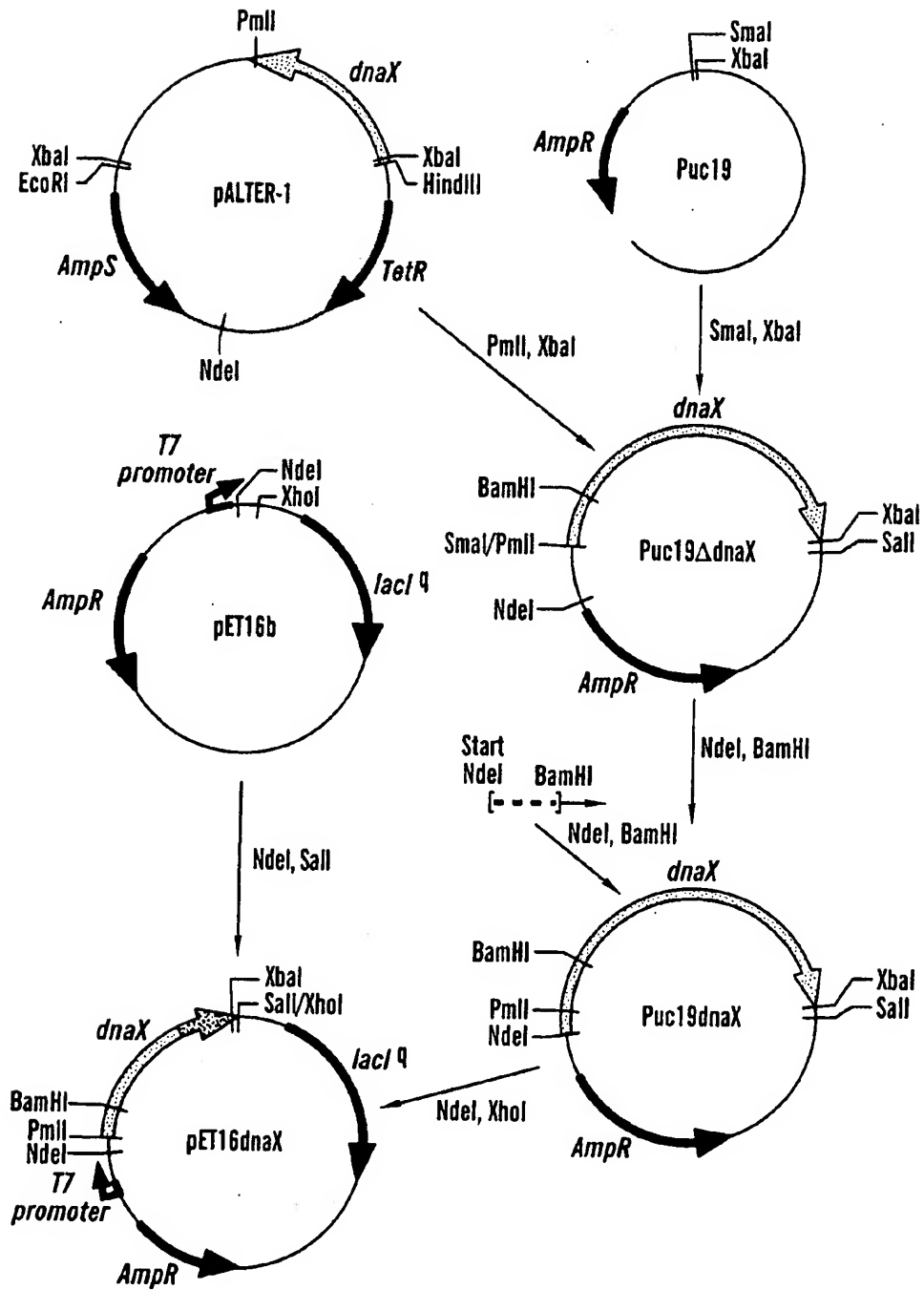


FIG. 9

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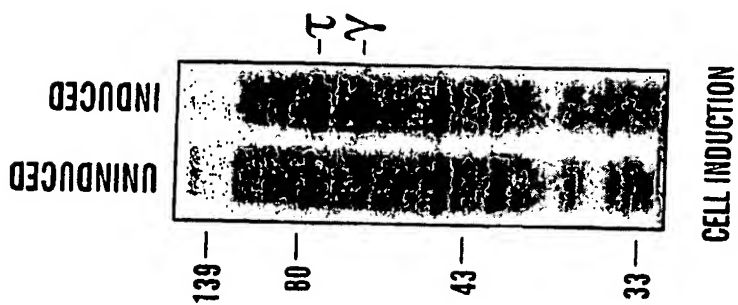


FIG. 10A

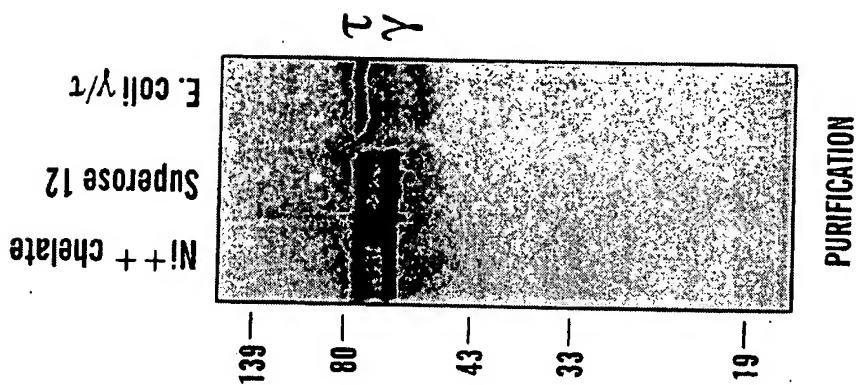


FIG. 10B

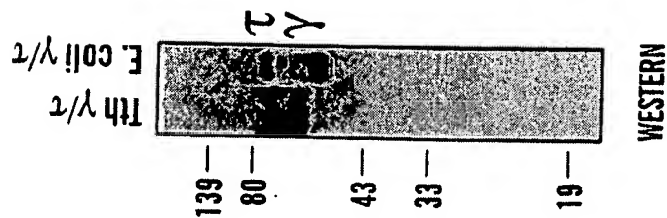


FIG. 10C

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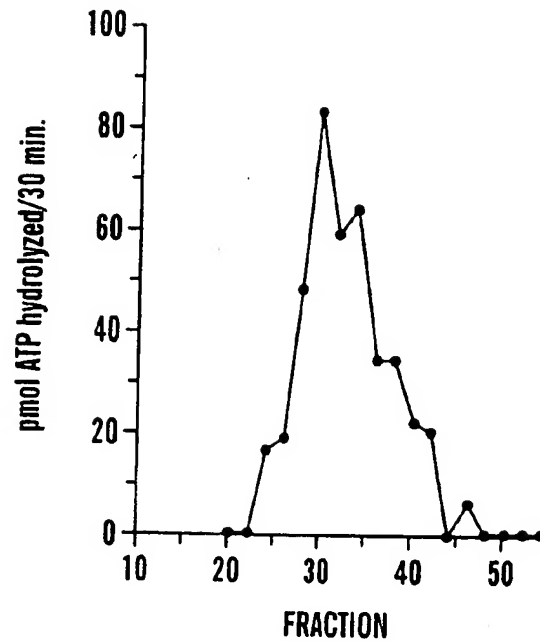


FIG. 11A

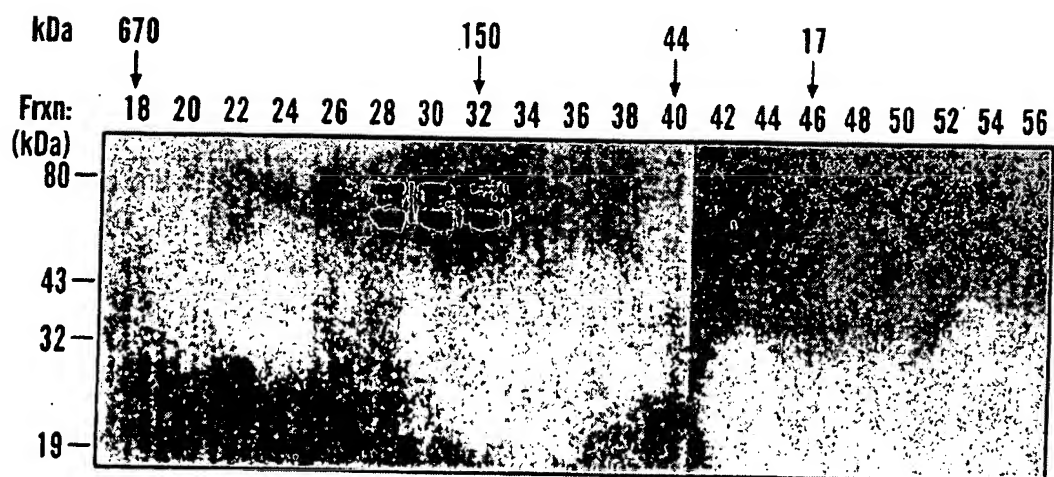


FIG. 11B

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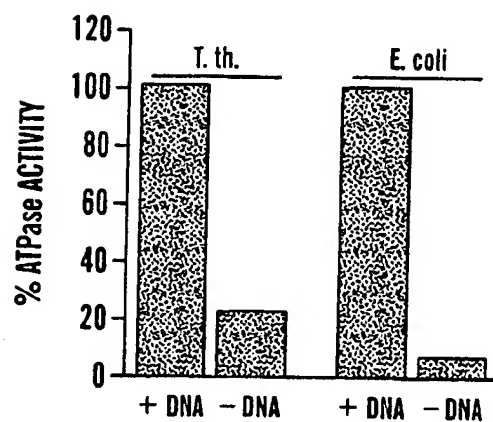


FIG. 12A

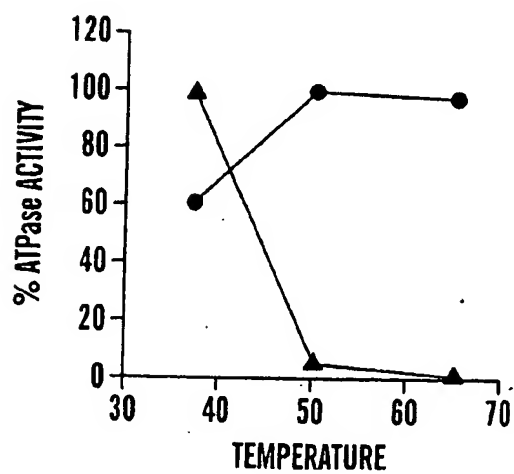


FIG. 12B

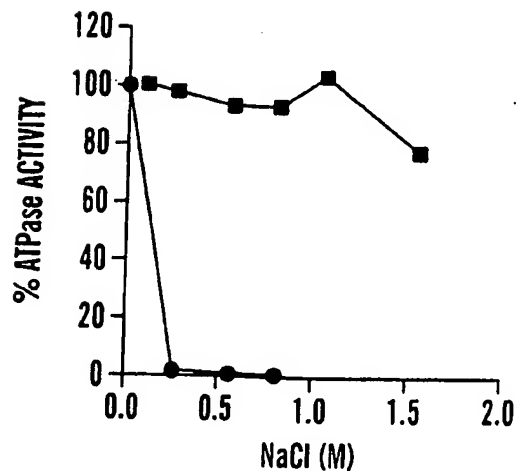


FIG. 12C

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FIG. 13A

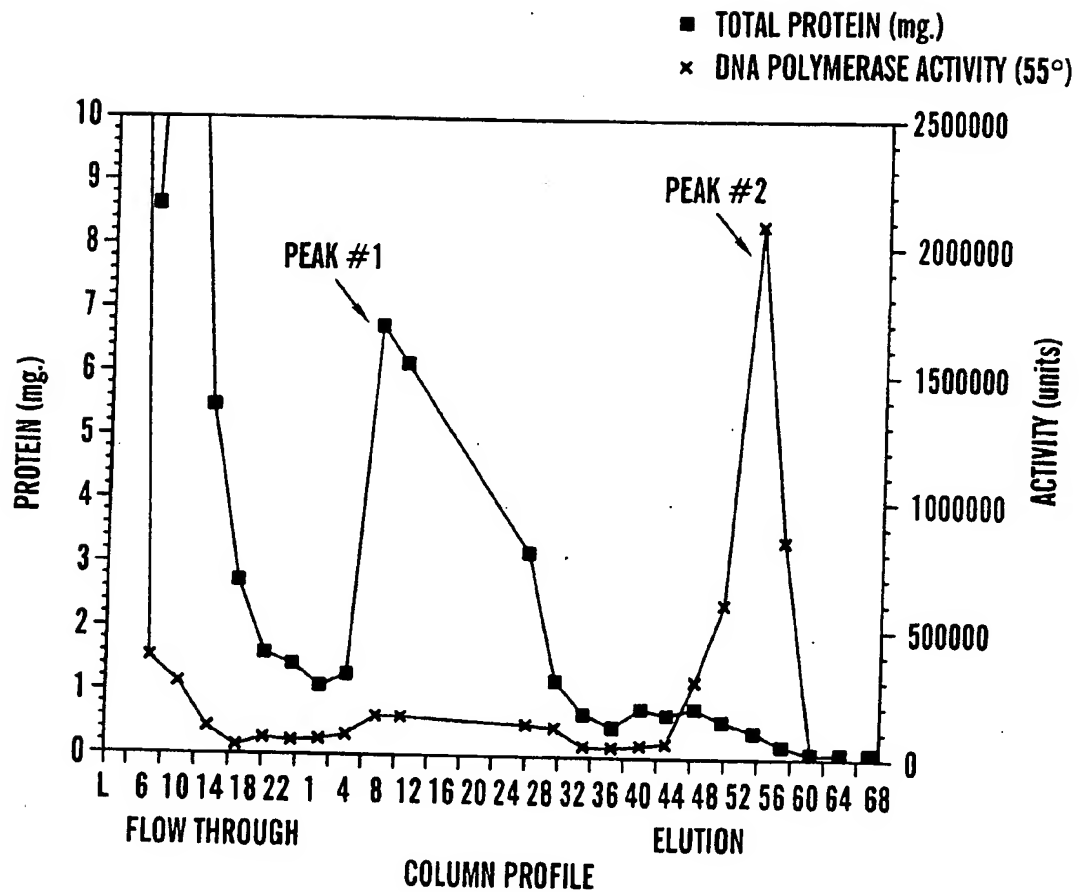


FIG. 13B

ATP AGAROSE STEP COLUMN

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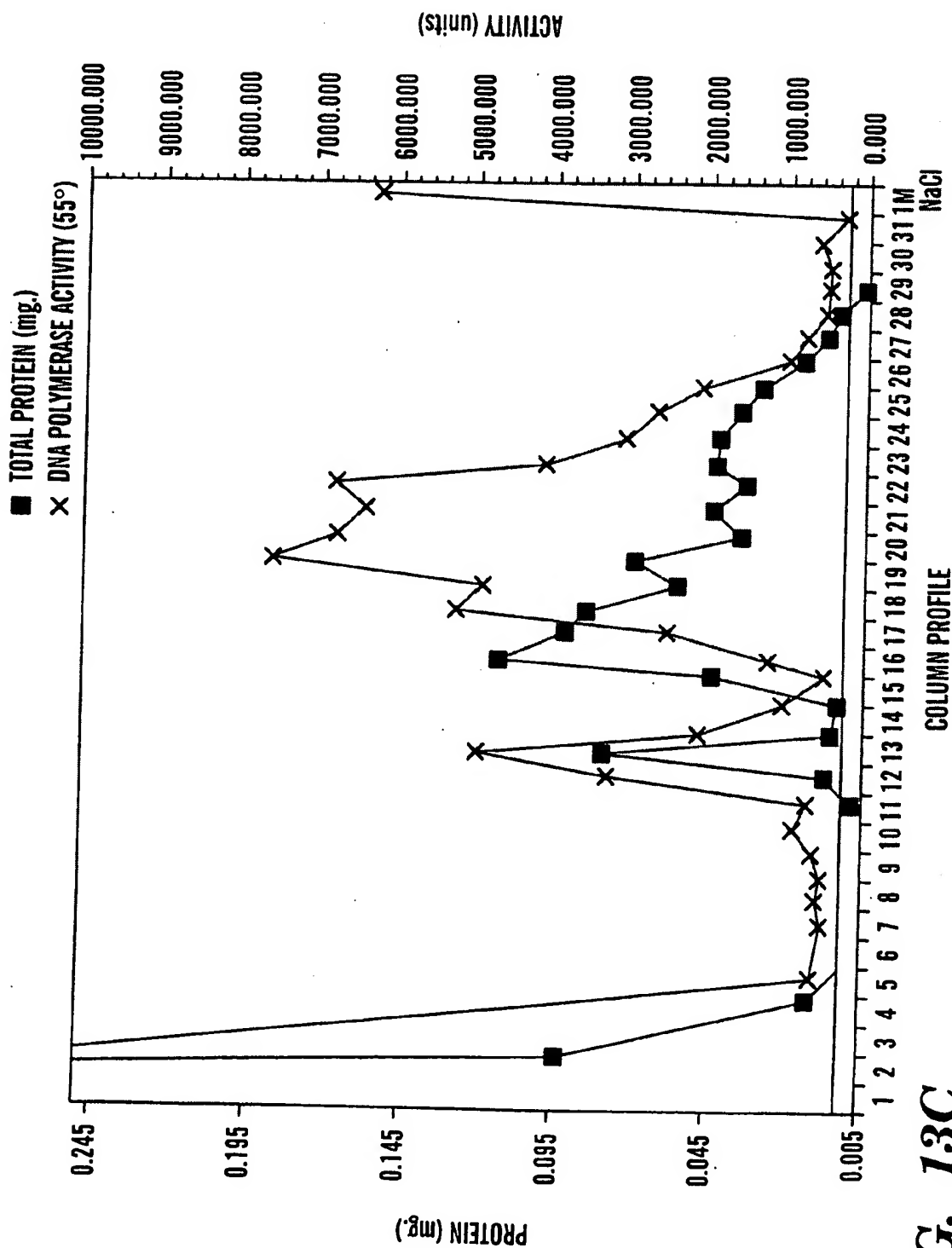


FIG. 13C

REPLACEMENT SHEET

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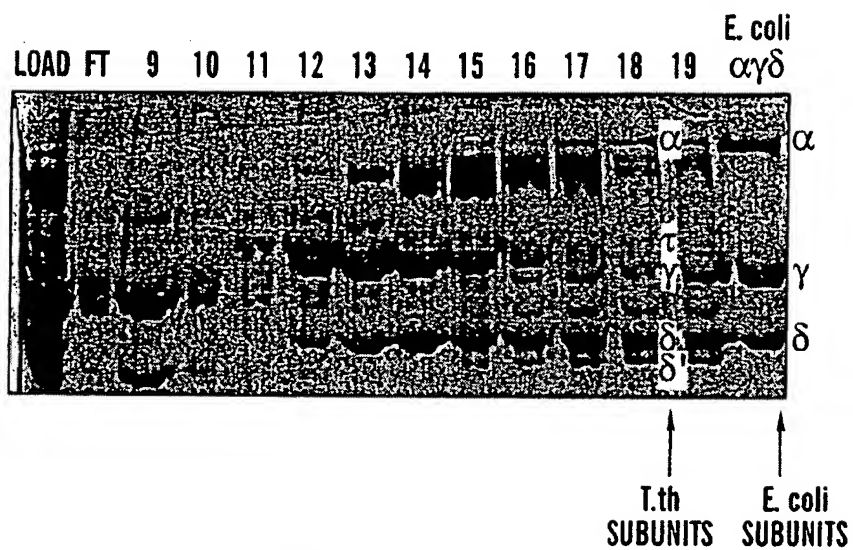


FIG. 14A

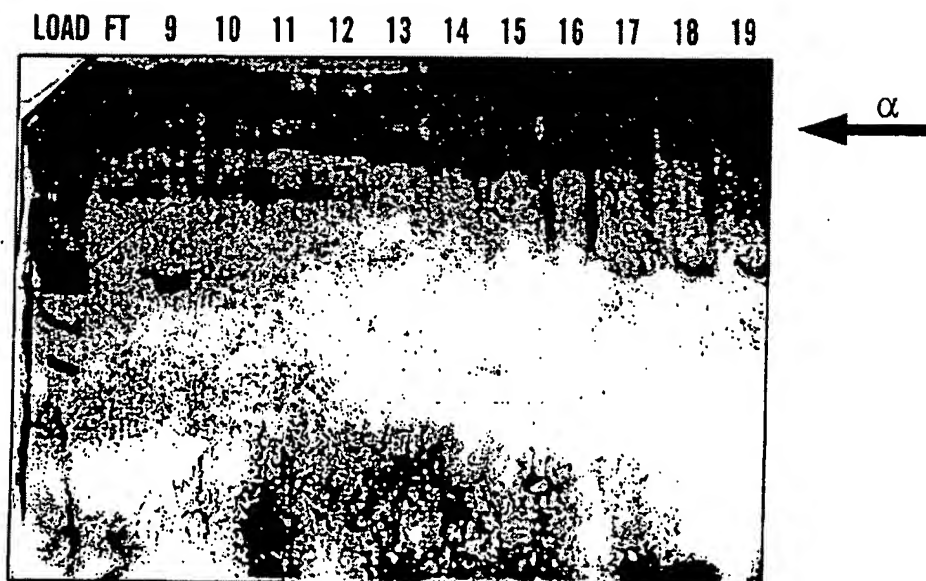


FIG. 14B

REPLACEMENT SHEET

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Alignment of TTH1 with alphas subunits of other organisms.

E. coli	DRYFLELIRTGRPDEESYLHAAVELAEARGLPVV	197	(ID#72)
V. chol.	DHFYLELIRTGRADEESYLHFALDVAEQYDLPVV	197	(ID#73)
H. inf.	DHFYLALSRTPNEERYIQAAKLAEKCDLPLV	197	(ID#74)
R. prow.	DRFYFEIMRHDLPREEQFIENSYIQIASELSIPV	195	(ID#75)
H. pyl.	DDFYLEIMRHGILDQRFIDEQVIKMSLETGLKII	213	(ID#76)
S. sp.	DDYYLEIQDHGSVEDRLVNINLVKIAQELDIKIV	202	(ID#77)
M. tub.	DNYFLELMDHGLTIERRVRDGLLEIGRALNIPPL	220	(ID#78)
T. th.	FFIEIQNHGLSEQK		(ID#61)

FIG. 15A

Alignment of TTH2 with alphas subunits of other organisms.

E. coli	NKRRAKNGEPPLDIAAIPLDDKKSFDMLQRSETTAVFQLESRGMKD	618	(ID#79)
V. chol.	NPRLKKAGKPPVRIEAIPLDDARSFRNLQDAKTTAVFQLESRGMKD	618	(ID#80)
H. inf.	NVRMVREGKPRVDIAAIPLDDPESFELLKRSETTAVFQLESRGMKD	618	(ID#81)
R. prow.	CKKLLKEQGIKIDFDDMTFDDKTKTYQMLCKGKGVGFQFESIGMKD	624	(ID#82)
H. pyl.	LKI IKTQHKI SVDFLSLDMDDPKVYKTIQSGDTVGFQIES - GMFQ	648	(ID#83)
S. sp.	QERKALQIRARTGSKKLPPDDVKKTHKLLLEAGDLEGFQLESQGMKQ	643	(ID#84)
M. tub.	IDNVRANRGIDLDESVPPLDDKATYELLGRGDTLGVFQLDGGPMRD	646	(ID#85)
T. th.	RVELDYDALTLDD		(ID#60)

FIG. 15B

REPLACEMENT SHEET

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ATGGGCGGGAGCTCCGCTTCGCCCACCTCCACCAGCACA	
CCCAGTTCTCCCTCCTGGACGGGGCGGCGAAGCTTTCCGA	
CCTCCTCAAGTGGGTCAAGGAGACGACCCCGAGGACCCC	120
GCCTTGGCCATGACCGACCACGGCAACCTCTTCGGGGCCG	
TGGAGTTCTACAAGAAGGCCACCGAAATGGGCATCAAGCC	
CATCCTGGGCTACGAGGCCTACGTGGCGGCGGAAAGCCGC	240
TTTGACCGCAAGCGGGGAAAGGGCCTAGACGGGGGCTACT	
TTCACCTCACCCCTCCTCGCCAAGGACTTCACGGGGGTACCA	
GAACCTGGTGCGCCTGGCGAGCCGGGCTTACCTGGAGGGG	360
TTTTACGAAAAGCCCCGGATTGACCGGGAGATCCTGCGCG	
AGCACGCCGAGGGCCTCATCGCCCTCTCGGGGTGCCTCGG	
GGCGGAGATCCCCCAGTTCATCCTCCAGGACCGTCTGGAC	480
CTGGCCGAGGCCCCGGCTCAACGAGTACCTCTCCATCTTCA	
AGGACCGCTTCTTCATCGAGATCCAGAACCACGGCCTCCC	
CGAGCAGAAAAAGGTCAACGAGGTCTCAAGGAGTTCGCC	600
CGAAAGTACGGCCTGGGGATGGTGGCCACCAACGACGGCC	
ATTACGTGAGGAAGGAGGACGCCCCGCGCCACGAGGTCTT	
CCTCGCCATCCAGTCCAAGAGCACCTTGGACGACCCCGGG	720
CGCTGGCGCTTCCCCTGCGACGAGTTCTACGTGAAGACCC	
CCGAGGAGATGCGGGCCATGTTCCCCGAGGAGGAGTGGGG	
GGACGAGCCCTTTGACAACACCGTGGAGATCGCCCCGCATG	840
TGCAACGTGGAGCTGCCCATCGGGGACAAGATGGTCTACC	
GAATCCCCCGCTTCCCCCTCCCCGAGGGGCGGACCGAGGC	
CCAGTACCTCATGGAGCTCACCTTCAAGGGGCTCCTCCGC	960
CGCTACCCGGACCGGATCACCGAGGGCTTCTACCGGGAGG	
TCTTCCGCCTTTTGGGGAAGCTTCCCCCCCACGGGGACGG	
GGAGGCCTTGGCCGAGGCCTTGGCCCAGGTGGAGCGGGAG	1080
GCTTGGGAGAGGCTCATGAAGAGCCTCCCCCCTTTGGCCG	
GGGTCAAGGAGTGGACGGCGGAGGCCATTTTCCACCGGGC	
CCTTTACGAGCTTTCCGTGATAGAGCGCATGGGGTTTCCC	1200
GGCTACTTCCTCATCGTCCAGGACTACATCAACTGGGCCC	
GGAGAAACGGCGTCTCCGTGGGGCCCCGGCAGGGGGAGCGC	
CGCCGGGAGCCTGGTGGCCTACGCCGTGGGGATCACCAAC	1320
ATTGACCCCTCCGCTTCGGCCTCCTCTTTGAGCGCTTCC	
TGAACCCGGAGAGGGTCTCCATGCCCCGACATTGACACGGA	
CTTCTCCGACCGGGAGCGGGACCGGGTGATCCAGTACGTG	1440
CGGGAGCGCTACGGCGAGGACAAGGTGGCCCAGATCGGCA	
CCCTGGGAAGCCTCGCCTCCAAGGCCGCCCTCAAGGACGT	
GGCCCCGGGTCTACGGCATCCCCACAAGAAGGCGGAGGAA	1560
TTGGCCAAGCTCATCCCGGTGCAGTTCGGGAAGCCCAAGC	
CCCTGCAGGAGGCCATCCAGGTGGTGCCGGAGCTTAGGGC	
GGAGATGGAGAAGGACCCCAAGGTGCGGGAGGTCTTCGAG	1680
GTGGCCATGCGCCTGGAGGGCCTGAACCGCCACGCCTCCG	
TCCACGCCCGCCGGGGTGGTGATCGCCGCCGAGCCCCCTCAC	
GGACCTCGTCCCCCTCATGCGCGACCAGGAAGGGCGGCCC	1800
GTCACCCAGTACGACATGGGGGCGGTGGAGGGCTTGGGGC	
TTTTGAAGATGGACTTTTTGGGCCTCCGCACCCTCACCTT	

FIG. 16A

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CCTGGACGAGGTCAAGCGCATCGTCAAGGCGTCCCAGGGG	1920
GTGGAGCTGGACTACGATGCCCTCCCCCTGGACGACCCCA	
AGACCTTCGCCCTCCTCTCCCGGGGGGAGACCAAGGGGGT	
CTTCCAGCTGGAGTCGGGGGGGATGACCGCCACGCTCCGC	2040
GGCCTCAAGCCGCGGCGCTTTGAGGACCTGATCGCCATCC	
TCTCCCTCTACCGCCCCGGGCCCATGGAGCACATCCCCAC	
CTACATCCGCCGCCACCACGGGCTGGAGCCCGTGAGCTAC	2160
AGCGAGTTTCCCCACGCCGAGAAGTACCTAAAGCCCATCC	
TGGACGAGACCTACGGCATCCCCGTCTACCAGGAGCAGAT	
CATGCAGATCGCCTCGGCCGTGGCGGGGTACTCCCTGGGC	2280
GAGGCGGACCTCCTGCGGCGGTCCATGGGCAAGAAGAAGG	
TGGAGGAGATGAAGTCCCAACGGGAGCGCTTCGTCCAGGG	
GGCCAAGGAAAGGGGCGTGCCCGAGGAGGAGGCCAACCGC	2400
CTCTTTGACATGCTGGAGGCCTTCGCCAACTACGGCTTCA	
ACAAATCCCACGCTGCCGCCTACAGCCTCCTCTCCTACCA	
GACCGCCTACGTGAAGGCCCACTACCCCGTGGAGTTCATG	2520
GCCGCCCTCCTCTCCGTGGAGCGGCACGACTCCGACAAGG	
TGGCCGAGTACATCCGCGACGCCCGGGCCATGGGCATAGA	
GGTCCTTCCCCCGGACGTCAACCGCTCCGGGTTTGACTTC	2640
CTGGTCCAGGGCCCGGCAGATCCTTTTCGGCCTCTCCGCGG	
TGAAGAACGTGGGCGAGGCGGCGGCGGAGGCCATTCTCCG	
GGAGCGGGAGCGGGGCGGCCCTACCGGAGCCTCGGCGAC	2760
TTCTCAAGCGGCTGGACGAGAAGGTGCTCAACAAGCGGA	
CCCTGGAGTCCCTCATCAAGGCGGGCGCCCTGGACGGCTT	
CGGGGAAAGGGCGCGGCTCCTCGCCTCCCTGGAAGGGCTC	2880
CTCAAGTGGGCGGCCGAGAACCGGGGAGAAGGCCCGCTCGG	
GCATGATGGGCCTCTTCAGCGAAGTGGAGGAGCCGCCTTT	
GGCCGAGGCCGCCCCCTGGACGAGATCACCCGGCTCCGC	3000
TACGAGAAGGAGGCCCTGGGGATCTACGTCTCCGGCCACC	
CCATCTTGCGGTACCCCGGGCTCCGGGAGACGGCCACCTG	
CACCCTGGAGGAGCTTCCCCACCTGGCCCGGGACCTGCCG	3120
CCCCGGTCTAGGGTCTCCTTGCCGGGATGGTGGAGGAGG	
TGGTGCGCAAGCCCAAAAGAGCGGCGGGATGATGGCCCG	
CTTCGTCTCTCCGACGAGACGGGGGCGCTTGAGGCGGTG	3240
GCATTGCGCCGGGCCCTACGACCAGGTCTCCCCGAGGCTCA	
AGGAGGACACCCCCGTGCTCGTCTCGCCGAGGTGGAGCG	
GGAGGAGGGGGGCGTGCGGGTGCTGGCCCAGGCCGTTTGG	3360
ACCTACGAGGAGCTGGAGCAGGTCCCCCGGGCCCTCGAGG	
TGGAGGTGGAGGCCTCCCTCCTGGACGACCGGGGGGTGGC	
CCACCTGAAAAGCCTCCTGGACGAGCACGCGGGGACCCTC	3480
CCCCTGTACGTCCGGGTCCAGGGCGCCTTCGGCGAGGCC	
TCCTCGCCCTGAGGGAGGTGCGGGTGGGGGAGGAGGCTGT	
AGGCGGCCCGCGTGTTCCGGGCCCTACCTCCTGCCCGACCG	3600
GGAGGTCCTTCTCCAGGGCGGCCAGGCGGGGAGGCCAG	
GAGGCGGTGCCCTTCTAGGGGGTGGGCCGTGAGACCTAGC	
GCCATCGTTCTCGCCGGGGGCAAGGAGGCCTGGGCCCGAC	3720
CCCTTTTGG	

FIG. 16B

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MGRELRFAPHLHQHTQFSLLDGAPKLSDLLKWVEETTPEDP	
ALAMTDHGNLFGAVEFYKKATEMGIKPILGYEAYVAAESR	
FDRKRGKGLDGGYFHLTLLAKDFTGYQNLVRLASRAYLEG	120
FYEKPRIDREILREHAEGLIASGCLGAEIPQFILQDRLD	
LAEARLNEYLSIFKDRFFIEIQNHGLPEQKKVNEVLKEFA	
RKYGLGMVATNDGHYVRKEDARAHEVLLAIQSKSTLDDPG	240
ALALPCEEFYVKTPEEMRAMFPEEEVGGRSPLTTPWRSPH	
VORGAAIGTRWSTRI PRFPLPEGRTEAQYLMELTFKGLLR	
RYPDRITEGFYREVFRLSGKLPPHGDGEALAEALAQVERE	360
AWERLMKSLPPLAGVKEWTAEAFHRLAYELSAIERMGFP	
GLLPHRPGHLHQLGPEKGVSVGPGRGGAAGSLVAYAVGITN	
IDPLRFGLLFFERFLNPERVSMFIDITDFSDRERDRVIQYV	480
RERYGEDKVAQIGTLGSLASKAALKEVARVYGI PRKKAEE	
LAKLIPVQFGKPKPLQEA IQVPELRAEMEKDPKVREVL	
VAMRLEGLNRHASVHAGRGGVFSEPLTDLVPLCATRKGGP	600
YTQYDMGAVEALGLLKMDFLGLRRTLFLDEVKRIVKASQG	
VELDYDALPLDDPKTFALLSRGETKGVFQLESGGMTATLR	
GLKPRRFEDLIAILSLYRPGPMEHIPTYIRRHHGLEPVS	720
SEFPHAKEYLKPILDETYGIPVYQEQIMQIASAVAGYSLG	
EADLLRRSMGKKKVEEMKSHRERFVQAKERGVPEEEANR	
LFDMLEAFANYGFNKSHAAAYSLLSYQTAYVKAHYPVEFM	840
AALLSVERHSDKVAEYIRDARAMGIEVLPPDVNRSGFDF	
LVQGRQILFGLSAVKNVGEAAAEAILRERERGGPYRSLGD	
FLKRLDEKVLNKRTLES LIKAGALDGFGERARLLASLEGL	960
LKWAENREKARSGMMGLFSEVEEPPLAEAAPLDEITRLR	
YEKEALGIYVSGHPILRYPGRLRETATCTLEELPHLARDLP	
PRSRVLLAGMVEEVVRKPTKSGGMMARFVLSDETGALEAV	1080
AFGRAYDQVSPRLKEDTPVLVLAEVEREEGGVRVLAQAVW	
TYQELEQVPRALEVEVEASLPDDRGVHLKSLLDEHAGTL	
PLYVRVQAFGEALLALREVRVGEEALGALEAAGFPAYLL	1200
PNREVSPRLTGSGGPRGRALSTGLALKTYPIALPGGNEAL	
ARPLL	

FIG. 16C

REPLACEMENT SHEET

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	Start1		Start2		3'-Exo I
T.th.	VERVVRTLLDGRFLLEEGVGLWENWRYPPFLEGEAVVLDLETTGLAG				LDEVIEVGLRLLEGG---RRLPF
D.rad.				PWPQDVVVFDDLETTGFSPA	SAAIVEIGAVRIVGGQIDETLKF
Bac.sub.	HGIKMIYMEANLVDDGVPIAYNAAHRLLEEETVVFDVETTGLSAV				YDTIIELAAVKVKGGE--IIDKF
H.inf.				MINPNRQIVLDTETTTGMNQLGAHYEGHCHIIIEIGAVELINRR--YTGNNX	
E.c.				MSTAITRQIVLDTETTTGMNQIGAHSEGHKIIIEIGAVEVNNRR--LTGNNF	
H.pyl.	NLEYLKACGLNFIETSENLTITLKNLKTPLKDEVFSDLETTGSCPI				KHEILLEIGAVQVKGGE--IINRF
					3'-Exo II
T.th.	QSLVR-PLPP---AEARSWNLT---				GIPREALEEAPSLEEVLEKAYPLRGDATALVIHNAAFDGLGFL-RPALEGLG
D.rad.	ETLVR-PTRPDGSML SIPWQAQRVHGISDEMVRRAPAXKDVLPDFDFVDGSAVVAHNVSFDDGGFM-RAGAERLG				
Bac.sub.	EAFAN-PHRP---LSATIIELT---				GITDDMLQDAPDVVDVIRDFREWIGDDILVAHNASFDDMGFL-NVAYKKLL
H.inf.	HIYIK-PDRP---XDPDAIKVH---				GITDEMLADKPEFKEVAQDFLDYINGAELLIHNAFPDVGFM-DYEFKRLN
E.c.	HVYLK-DRLV---DPEAFGVH---				GIADVDFLLDKPTFAEVAVEFMDYIRGAELVIHNAAFDVGFM-DYEFSLLK
H.pyl.	ETLVKVKVSP-----DYIAELT---				GITYEDTLNAPSHEALQELRLFLGNSVVFVAHNAFDFNFIIGRYFVEKLH
					3'-Exo IIIC
T.th.	-----YRLENPVVDSLRLARRGLPGLRRYGLDALSEVLELPRRT---				CHRALEDVERTLAVVHEVYMLT-----SG
D.rad.	-----LSWAPERELCTMQLSRRAPPRERTHNLTVLAERLGLFAPGGRHRSYGDVQVTAQAYLRLLLELG-----ER				
Bac.sub.	E-----VEKAKNPVIDTLELGRFLYPEFKNHRLNTLCKKFDIELTQ---				HHRATYDTTEATAYLLLKMLKDA-----EK
H.inf.	-LNVKTDDICI CLVTDTLQMARQMPGKRN-NLDALCDRLGIDNSKRTLHGALLDAEILADVYLMMTGGQTNLFDDEE				
E.c.	RDIAKTNTFCVKVTDLSLAVARKMFPKGKRN-SLDALCARYEIDNSKRTLHGALLDAQIILAENVYLAAMTGGQTSMAFAME				
H.pyl.	-----CPLLNLKLCITLDSLKRAILSMRY-SLSFLKELLGFGIEV--SHRAYADALASYKLFELCLNLP--SYIKT				

FIG. 17

REPLACEMENT
SHEET

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ATGGTGGAGCGGGTGGTGCGGACCCTTCTGGACGGGAGGT 40
TCCTCCTGGAGGAGGGGGTGGGGCTTTGGGAGTGGCGCTA
CCCCTTTCCCCTGGAGGGGGGAGGCGGTGGTGGTCCTGGAC 120
CTGGAGACCACGGGGCTTGCCGGCCTGGACGAGGTGATTG
AGGTGGGCCTCCTCCGCCTGGAGGGGGGGAGGCGCCTCCC 200
CTTCCAGAGCCTCGTCCGGCCCCCTCCCGCCCGCCGAAGCC
CGTTCGTGGAACCTCACCGGCATCCCCCGGGAGGCCCTGG 280
AGGAGGCCCCCTCCCTGGAGGAGGTTCTGGAGAAGGCCTA
CCCCCTCCGCGGCGACGCCACCTTGGTGATCCACAACGCC 360
GCCTTTGACCTGGGCTTCCTCCGCCCCGGCCTTGGAGGGCC
TGGGCTACCGCCTGGAAAACCCCGTGGTGGACTCCCTGCG 440
CTTGGCCAGACGGGGCTTACCAGGCCTTAGGCGCTACGGC
CTGGACGCCCTCTCCGAGGTCCTGGAGCTTCCCCGAAGGA 520
CCTGCCACCGGGCCCTCGAGGACGTGGAGCGCACCCCTCGC
CGTGGTGCACGAGGTATACTATATGCTTACGTCCGGCCGT 600
CCCCGCACGCTTTGGGAACCTCGGGAGGTAG

FIG. 18A

MVERVVRTLDDGRFLLEEGVGLWEWRYPFPLEGEAVVVLD 40
LETTGLAGLDEVIEVGLLRLEGGRRLPFQSLVRPLPPAEA
RSWNLTGIPREALEEAPSLEEVLEKAYPLRGDATALVIHNA 120
AFDLGFLRPALEGLGYRLENPVVDSLRLARRGLPGLRRYG
LDALSEVLELPRRTCHRALEDVERTLAVVHEVYYMLTSGR 200
PRTLWELGRZ

FIG. 18B

REPLACEMENT
SHEET

Alignment of dnaA genes.

P.mar.	MLEASWEK	VQSSL--KQNLK--	-----PSYE	TWIRPTEFG--PKN	GELTLIAPNSFSSAW	LKNYSQTIQETAE-	65
Syn.sp.	MVSCENLWQQ	ALAIL--ATQLTK--	-----PAFD	TWIKASVLIS--LGD	GVATIQVENGFLVNH	LQKSYGPLLMEVLT-	67
B.sut.	MENILDLWNQ	ALAQI--EKKLSK--	-----PSFE	TWIKSTKAHS--LQG	DTLTITAPNEFARDW	LESRYLHLIADTIY-	67
M.tub.	MTDDPGSGFTTWNA	VVSELNGDPKVDGCP	SSDANLSAPLTPQQR	AWLNLVQPLT--IVE	GFALLSVPSFVQNE	IERHLRAPITDALS-	87
T.th.	MSHEAVWQH	VLEHI--RRSITE--	-----VEFH	TWFERIRPLG--IRD	GVLELAVPTSFDLW	IRRHVAGLIOEGPR-	66
E.coli	MSLSLWQQ	CLARL--QDELPA--	-----TEFS	MMIRPLQAE--LSD	NTLALYAPNRFVLW	VRDKYANNINGLLT-	64
T.mar.	MKER	ILQEI--KTRVNR--	-----KSWE	LWFSFDVKS--IEG	NKVVFSGNLFKEW	LEKKYVSVLKAVK-	61
H.pyl.	MDTNNNIEKE	ILALVKQNPVSL--	-----IEYE	NYPSQLKYNPNASKS	DIAFFYAPNQVLCCT	ITAKYGALLKEILSQ	72
P.mar.	EIFG----	EPVTVHVK	VKANAESSDEHYSSA	P-----	ITPPLEASPGSV	DSSGSSLRLSK----	130
Syn.sp.	DLTG----	QEITVKLI	TDGLEPHS----	LIGQ	SSLPMETTP----	-----	115
B.sut.	ELTG----	EELSIFKV	IPQNDQVEDFMPKPQ	VKKAVKEDTSDFPQN	-----	-----MLNPKYTFDT	119
M.tub.	RLGH-QIQLGVRIA	PPATDEADDTTVPPS	ENPATTSPDTTDDND	EIDDSAAARGDNQHS	WPSYFTERPHNTDSA	TAGVTSLNRRYTFDT	176
T.th.	LLGAQ-APRFELRVV	PGVVQEDIFQPPPS	PPAQAP-----	-----	-----	-----EDTFKT	108
E.coli	SFCGADAPQLRFEVG	TKPVTQTPQAAVTSN	VAAPAQVAQTQPORA	APSTRSGWNVFAPA	EP-----	-----TYRSNVNVKHTFDN	140
T.mar.	VVLG----	NDATFEIT	YEAFEPHSSYSEPLV	KKRAVLITP-----	-----	-----LNPDYTFEN	106
H.pyl.	NKVG-MHLAHSVDVR	IEVAPKIQINAQSN	NYKAIKTS-----	-----	-----	-----VKDSYTFEN	118
P.mar.	FVVGPNRMAHAAAM	AVAESPGREFNPLFI	CGGVGLGKTHLMQAI	CHYRLEIDPGAKVSY	VSTETFTNDLIL--A	IRQDRMQAFRDRYR-	217
Syn.sp.	FVVGPTNRMAHAASL	AVAESPGREFNPLFL	CGGVGLGKTHLMQAI	AHYRLEMYPNAKVY	VSTERFTNDLIT--A	IRQDNMEDFRSYR-	202
B.sut.	FVIGSGNRFAHAASL	AVAEAPAKAYNPLFI	YGGVGLGKTHLMHAI	GHYVIDHNPSAKVY	LSSEKFTNEFIN--S	IRDNKAVDFRNRYR-	206
M.tub.	FVIGASNRFAHAAAL	AIAEAPARAYNPLFI	WGESGLGKTHLLHAA	GNYAQRLLFCGRMKVY	VSTEEFTNDFIN--S	LRDDRKVAFKRSYR-	263
T.th.	SWGPTTPWPHGGAV	AVAESPGRAYNPLFI	YGGRLGKTYLMLHAV	GPLRAKRFPHMRLEY	VSTETFTNELINRPS	AR-DRMTEFRERYR-	196
E.coli	FVEGKSNQLARAAAR	QVADNPGGAYNPLFL	YGGTGLGKTHLLHAV	GNGIMARKPNKNAKVY	MHSERFVQDMVK--A	LQNNAIIEEFKRYR-	227
T.mar.	FVVGPGNSFAYHAAL	EVAKHPGR-YNPLFI	YGGVGLGKTHLLQSI	GNVYVQNEPDLRVMY	ITSEKFLNDLVD--S	MKEGKLNFEFREKYRK	193
H.pyl.	FVVGSCNNTVYEIAK	KVAQSDTPPPYNPVLV	YGGTGLGKTHILNAI	GNHALEK--HKKVVL	VTSEDFLTDFLK--H	LDNKTMDSFKAKYR-	203

FIG. 19A

REPLACEMENT SHEET

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P. mar.	AADLILVDDIQFIEG	KEYTQEEFFHTFNAL	HDAGSQIVLASDRPP	SQIPRLQERLMSRFS	MGLIADVQAPDLETR	MAILQKKAHERVGL	307
Syn. sp.	SADFLLLIDDIQFIK	KEYTQEEFFHTFNAL	HEAGQVWVASDRAP	ORIPGLQDRLLSRFS	MGLIADIQVPDLETR	MAILQKKAHYDRIRL	292
B. sub.	NVDVLLIDDIQFIK	KEYTQEEFFHTFNAL	HEESKQIVISSDRPP	KEIPTLEDRLSRFE	WGLITDITPPDLETR	MAILRKKAKAEGLDI	296
M. tub.	DVDVLLVDDIQFIEG	KEGIQEEFFHTFNAL	HNANKQIVISSDRPP	KQLATLEDRLTRFE	WGLITDVQPPPELETR	MAILRKKAKAEMERLAV	353
T. th.	SVDLLVDDIQFIEG	KERTQEEFFHTFNAL	YEAHQIILSSDRPP	KDILTLEARLRSRFE	WGLITDNPAPELETR	MAILKMNAS-SGPED	285
E. coli	SVDALLIDDIQFFAN	KERSQEEFFHTFNAL	LEGNOQIILTSDRYP	KEINGVEDRLKSRFG	WGLITVAIEPPELETR	VAILMKKADENDIRL	317
T. mar.	KVDILLIDDVQFLIG	KTGVOQTELFHTFNEL	HDSGKQIVICSAREP	OKLSEFQDRLLVSRFQ	MGLVAKLEPPDEETR	KSIARKMLEIEHGEL	283
H. pyl.	HCDFFLLDDAQFLOG	KPKLEEEFFHTFNEL	HANSKQIVLISDRSP	KNIAGLEDRLKSRFE	WGITAKVMPDLETK	LSIVKQKQCLNQITL	293
P. mar.	PRDLIQFIAGRFTSN	IRELEGALTRAIAFA	SITGLPMTVDSIAPM	LD-----PNGQGVET	PKQVLDKVAEVFKVT	PDEMRSASRRR-PVS	392
Syn. sp.	PKEVIEYIASHYTSN	IRELEGALIRAIAYT	SLSNVAMTVENIAPV	LN-----PPVEKVAAA	PETIITIVAQHYQLK	VEELLSNSRRR-EVS	377
B. sub.	PNEVMLYIANQIDSN	IRELEGALIRVVAYS	SLINKDINADLAAEA	LKDII-PSSKPKVIT	IKEIQRVVGGQFNK	LEDFKAKKRTK-SVA	384
M. tub.	PDDVLELIASSIERN	IRELEGALIRVTAF	SLNKTPIDKALAEIV	LRDLI-ADANTMQIS	AATIMAATAEYFDTT	VEELRGPGKTR-ALA	441
T. th.	PEDALEYIARQVTSN	IREWEGALMRASPFA	SLNGVELTRAVAACA	LRHLR-P--RELEAD	PLEIIRKKAAGPVRPE	TPGGAHGERRKKEVV	372
E. coli	PGEVAFYIAKRLRSN	VRELEGALNRVIANA	NFTGRAITIDFVREA	LRDLI-A-LQEKLV	IDNIQKTVAEYKIK	VADLLSKRRSR-SVA	404
T. mar.	PEEVLNFAENVDDN	LRLRGATIKLLVYK	ETTQKEVDLKEAILL	LKDFIKPNRVKAMDP	IDELIEIVAKVTGVP	REEILSNSRNV-KAL	372
H. pyl.	PEEVMEYIAQHISDN	IRQMEGAIKISVNA	NLMNASIDLNLAKTV	LEDL--QKDHAEKSS	LENILLAVAQSLNLK	SSEIKVSSRQK-NVA	380
P. mar.	QARQVGMVLMRQGTN	LSLPRIGDTFGGKDH	TTVMAIEQVEKKLS	S-----DPQIA	SQVQKIRDLLQIDSR	RKR----	461
Syn. sp.	LARQVGMVLMRQHTD	LSLPRIGEAFGGKDH	TTVMYSCDKITQLQQ	K-----DWETS	QTLTSLSHRINIAGQ	APES----	447
B. sub.	FPRQIAMYLSREMTD	SSLPKIGEEFGGRDH	TTVIHAHEKISKLLA	D-----DEQLQ	QHVKEIKEQLK----	-----	446
M. tub.	QSRQIAMYLCRELTD	LSLPKIGQAFG-RDH	TTVMAQRKILSEMA	E-----RREVF	DHVKELTTRIRQRSK	R-----	507
T. th.	LPRQIAMYLVRELTP	ASLPEIGQLFGGRDH	TTVRYAIQKVQELAG	KP-----DREVQ	GLLRTLREACTDPVD	NLWITCG	446
E. coli	RPRQMAMALAKELTN	HSLPEIGDAFGGRDH	TTVLHACRKIEQLRE	E-----SHDIK	EDFSNLIRTLSS----	-----	467
T. mar.	TARRIGMVVAKNYLK	SSLRTIAEKFN-RSH	PVVVDSVKVKDLSLL	KG-----NKQLK	ALIDEVIGEISRRAL	SG-----	440
H. pyl.	LARKLVVYFARLYTP	NPTLSLAQFLDLKDH	SSISKMYSGVKMKLE	EESKPFVLSLREEIK	NRLNELNDKKTAFNS	SE-----	457

FIG. 19B

REPLACEMENT SHEET

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GTGTCGCACGAGGCCGTCTGGCAACACGTTCTGGAGCACA
 TCCGCCGCAGCATCACCGAGGTGGAGTTCCACACCTGGTT
 TGAAAGGATCCGCCCTTGGGGATCCGGGACGGGGTGCTG 120
 GAGCTCGCCGTGCCACCTCCTTTGCCCTGGACTGGATCC
 GGCGCCACTACGCCGGCCTCATCCAGGAGGGCCCTCGGCT
 CCTCGGGGCCCAGGCGCCCCGGTTTGAGCTCCGGGTGGTG 240
 CCCGGGGTCGTAGTCCAGGAGGACATCTTCCAGCCCCCGC
 CGAGCCCCCGGCCCAAGCTCAACCCGAAGATACCTTTAA
 AACTTCGTGGTGGGGCCCAACAACCTCCATGGCCCCACGGC 360
 GGCGCCGTGGCCGTGGCCGAGTCCCCCGGCCGGGCCTACA
 ACCCCCTCTTCATCTACGGGGGCGGTGGCCTGGGAAGAC
 CTACCTGATGCACGCCGTGGGCCCACTCCGTGCGAAGCGC 480
 TTCCCCCACATGAGATTAGAGTACGTTTCCACGGAACTT
 TCACCAACGAGCTCATCAACCGGCCATCCGCGAGGGACCG
 GATGACGGAGTTCCGGGAGCGGTACCGCTCCGTGGACCTC 600
 CTGCTGGTGGACGACGTCCAGTTCATCGCCGGAAAGGAGC
 GCACCCAGGAGGAGTTTTTCCACACCTTCAACGCCCTTTA
 CGAGGCCCAACAAGCAGATCATCCTCTCCTCCGACCGGCCG 720
 CCCAAGGACATCCTCACCTGGAGGCGCGCCTGCGGAGCC
 GCTTTGAGTGGGGCCTGATCACCGACAATCCAGCCCCCGA
 CCTGGAACCCGGATCGCCATCCTGAAGATGAACGCCAGC 840
 AGCGGGCCTGAGGATCCCGAGGACGCCCTGGAGTACATCG
 CCCGGCAGGTACCTCCAACATCCGGGAGTGGGAAGGGGC
 CCTCATGCGGGCATCGCCTTTCGCCTCCCTCAACGGCGTT 960
 GAGCTGACCCGCGCCGTGGCGGCCAAGGCTCTCCGACATC
 TTCGCCCCAGGGAGCTGGAGGCGGACCCCTTGGAGATCAT
 CCGCAAAGCGGCGGGACCAGTTCGGCCTGAAACCCCGGGA 1080
 GGAGCTCACGGGGAGCGCCGCAAGAAGGAGGTGGTCCTCC
 CCCGGCAGCTCGCCATGTACCTGGTGCGGGAGCTCACCCC
 GGCTCCCTGCCCGAGATCGACCAGCTCAACGACGACCGG 1200
 GACCACACCACGGTCCTCTACGCCATCCAGAAGGTCCAGG
 AGCTCGCGGAAAGCGACCGGGAGGTGCAGGGCCTCCTCCG
 CACCTCCGGGAGGCGTGCACATGA

FIG. 20A

REPLACEMENT
SHEET

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VSHEAVWQHVLEHIRRSITEVEFHTWFERIRPLGIRDGVL
ELAVPTSFALDWIRRHAYAGLIQEGPRLPGAQAPRFELRVV
PGVVVQEDIFQPPPSPPAQAQPEDTFKTSWWGPTTPWPHG 120
GAVAVAESPGRAYNPLFIYGGRGLGKTYLMHAVGPLRAKR
FPHMRLEYVSTETFTNELINRPSARDRMTEFRERYRSVDL
LLVDDVQFIAGKERTQEEFFHTFNALYEAHKQIILSSDRP 240
PKDILTLEARLRSRFEWGLITDNPAPDLETRIAILKMNAS
SGPEDPEDALEYIARQVTSNIREWEGALMRASPFASLNGV
ELTRAVAAKALRHLRPRELEADPLEIIRKAAGPVRPETPG 360
GAHGERRKKEVVLPRQLAMYLVLRELTPASLPEIDQLNDDR
DHTTVLYAIIQKVQELAESDREVQGLLRTLREACT

FIG. 20B

REPLACEMENT
SHEET

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ATGAACATAACGGTTCCCAAAAACTCCTCTCGGACCAGC 40
TTTCCCTCCTGGAGCGCATCGTCCCCTCTAGAAGCGCCAA
CCCCCTCTACACCTACCTGGGGCTTTACGCCGAGGAAGGG 120
GCCTTGATCCTCTTCGGGACCAACGGGGAGGTGGACCTCG
AGGTCCGCCTCCCCGCCGAGGCCCAAAGCCTTCCCCGGGT 200
GCTCGTCCCCGCCAGCCCTTCTTCCAGCTGGTGCGGAGC
CTTCCTGGGGACCTCGTGGCCCTCGGCCTCGCCTCGGAGC 280
CGGGCCAGGGGGGGCAGCTGGAGCTCTCCTCCGGGCGTTT
CCGCACCCGGCTCAGCCTGGCCCTGCGGAGGGCTACCCC 360
GAGCTTCTGGTGCCCGAGGGGGAGGACAAGGGGGCCTTCC
CCCTCCGGACGCGGATGCCCTCCGGGGAGCTCGTCAAGGC 440
CTTGACCCACGTGCGCTACGCCGCGAGCAACGAGGAGTAC
CGGGCCATCTTCCGCGGGGTGCAGCTGGAGTTCTCCCCC 520
AGGGCTTCCGGGCGGTGGCCTCCGACGGGTACCGCCTCGC
CCTCTACGACCTGCCCCTGCCCCAAGGGTTCCAGGCCAAG 600
GCCGTGGTCCCCGCCCGGAGCGTGGACGAGATGGTGCGGG
TCCTGAAGGGGGCGGACGGGGCCGAGGCCGTCTCGCCCT 680
GGGCGAGGGGGTGTGGCCCTGGCCCTCGAGGGCGGAAGC
GGGGTCCGGATGGCCCTCCGCCTCATGGAAGGGGAGTTCC 760
CCGACTACCAGAGGGTCATCCCCCAGGAGTTCGCCCTCAA
GGTCCAGGTGGAGGGGGAGGCCCTCAGGGAGGCGGTGCGC 840
CGGGTGAGCGTCCTCTCCGACCGGCAGAACCACCGGGTGG
ACCTCCTTTTGGAGGAAGGCCGGATCCTCCTCTCCGCCGA 920
GGGGGACTACGGCAAGGGGCAGGAGGAGGTGCCCGCCCAG
GTGGAGGGGCCCGACATGGCCGTGGCCTACAACGCCCGCT 1000
ACCTCCTCGAGGCCCTCGCCCCCGTGGGGGACCGGGCCCA
CCTGGGCATCTCCGGGCCCACGAGCCCGAGCCTCATCTGG 1080
GGGGACGGGGAGGGGTACCGGGCGGTGGTGGTGCCCTCA
GGGTCTAG 1128

FIG. 21A

REPLACEMENT
SHEET

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MNITVPKKLLSDQLSLLERIVPSRSANPLYTYLGGLYAEEG 40
ALILFGTNGEVDLEVRLPAEAQSLPRVLVPAQPFFQLVRS
LPGDLVALGLASEPGQGQLELSSGRFRTRLAPAEGLYP 120
ELLVPEGEDKGAFPLRTRMPSEGELVKALTHVRYAASNEEY
RAIFRGVQLEFSPQGFRAVASDGYRLALYDLPLPQGFQAK 200
AVVPARSVDEMVRVLKGADGAEAVLALGEGVLALALEGGS
GVRMALRLMEGEFPDYQRVIPQEFALKVQVEGEALREAVR 280
RVSVLSDRQNHRVDLLLEEGRILLSAEGDYGKGQEEVPAQ
VEGPDMAVAYNARYLLEALAPVGDRAHLGISGPTSPSLIW 360
GDGEGYRAVVVPLRVZ

FIG. 21B

REPLACEMENT SHEET

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MNITVPKLLSDQLSLLERIVPSRSANPLYTYLGLYAEFAGALILFGTNGEVDLEVRPAE
MKFTVEREHLKPLQOVSGPLGGRPTLPILGNLLQVADGTLSTLGTDLMEMVARVALV
MKFIIEREQLKPLQOVSGPLGGRPTLPILGNLLKVTENTLSLTGTDLEMMMARVSL
MQFSISRENLLKPLQOVCGVLSNRPNIPVNNVLLQIEDYRLTITGTDLEVELSSQTQLS
MHFTIQREALLKPLQVAGVVERQTLVLSNVLLVVGQQLSLTGTDLLEVELVGRVQLE
MKFTIQNDILTGNLKKITRVLVKNISFPILNIIQVEDGTLSLTNTNLEIELISKIEII
* . . . * . . . * . . . * . . . *

T. th. beta
E. coli. bet
P. mirab. be
H. infl. bet
P. put. beta
B. cap. beta

AQSLP-RVLPAPQFFQLVRSPLPGDLVALGLASEPGQGQLELSSGRFTRLSLAPAEY
QPHEPGATVPARKFFDICRGLP-EGAEIAVQLE---GERMLVRSGRSRFSLSTLPAADF
QSHEIGATVPARKFFDIWRGLP-EGAEISVELD---GDRLLVRSGRSRFSLSTLPASDF
SSSENGTFTIPAKKFLDICRTLS-DDSEITVTFE---QDRALVQSGRSRFTLATQPAEEY
EPAEPGEITVPARKLMDICKSLP-NDALIDIKVD---EQKLLVKAGRSRFTLSLTPANDF
TKYIPGKTTISGRKILNICRTLS-EKSIKIMQLK---NKKMYISSSENSNYILSTLSADTF
* . . . * . . . * . . . * . . . *

T. th. beta
E. coli. bet
P. mirab. be
H. infl. bet
P. put. beta
B. cap. beta

PELLVPEGEDKGAFFLRTMRMPSELVKALTHVRYAASNEEYRAIFRGVQLEFSPQGFRAV
PNLDD---WQSEVEFTLPQAT---MKRLIEATQFSMAHQDVRYVYLNGLMFLFETEGEELRTV
PNLDD---WQSEVEFTLPQAT---LKRLIESTQFSMAHQDVRYVYLNGLMFLFETENTELRTV
PNLTD---WQSEVDFELPQNT---LRLIEATQFSMANQDARYFLNGMKFETEGNLLRTV
PTVEE---GPGSLTCNLEQSK---LRLIERTSFAMAQQDVRYVYLNGLMLLEVSRLTRAV
PNHQN---FDYISKFDISSNI---LKEMIEKTEFSMGKQDVRYVYLNGLMLLEKKDKFLRSV
* . . . * . . . * . . . * . . . *

T. th. beta
E. coli. bet
P. mirab. be
H. infl. bet
P. put. beta
B. cap. beta

ASDGYRLALYDLPLPQGFQA--KAVVPARSVDEMVRVLKGADGAEAVALGEGVLALALE
ATDGHRLAVCSMPIGQSLPS-HSVIVPRKGVIELMRMLDG-GDNPLRVQIGSNIRAHVG
ATDGHRLAVCAMDIGQSLPG-HSVIVPRKGVIELMRLLDGSGESLLQLQIGSNLRAHVG
ATDGHRLAVCTISLEQELQN-HSVILPRKGVLELVRLLLET-NDEPARLQIGTNLVRHLK
STDGHRALALCSMSAPIEQEDRHQVIVPRKGVILELARLLTD-PEGMVSVILGQHHRATG
ATDGYRLAISYTLQKKDINF-FSIIIPNKAVMELLKLNT-QPQLNIIIGSNSIRIYTK
* . . . * . . . * . . . * . . . *

T. th. beta
E. coli. bet
P. mirab. be
H. infl. bet
P. put. beta
B. cap. beta

FIG. 22A

REPLACEMENT SHEET

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T.th.beta	GGSGVRMALRMEGEFFDQYQVPIQEFALKVQVEGEALREAVRRVSVLSDRQNHVRVDLLL	
E.coli.bet	---DFIFTSKLVDCRFPDYRRVLPKNPDKHLEAGCDLLKQAFARAAILSNEKFRGVRLVY	
P.mirab.be	---DFIFTSKLVDCRFPDYRRVLPKNPDKHLEAGCDLLKQAFARAAILSNEKFRGVRLVY	
H.infl.bet	---NTVFTSKLIDGRFPDYRRVLPKNPDKHLEAGCDLLKQAFARAAILSNEKFRGVRLVY	
P.put.beta	---EFTFTSKLVDCRFPDYRRVLPKNPDKHLEAGCDLLKQAFARAAILSNEKFRGVRLVY	
B.cap.beta	---NLIFTTQLIEGEYDPDYKSVLFKEKKNPITITNSILLKKSLLRVAILAHEKFCGIEIKI	
*	
T.th.beta	EEGRILLSAEGDYGK-GQEEVPAQVEGPDMAVAYNARYLLEALAPVG-DRAHLGISGPTS	
E.coli.bet	SENQLKITANNPEQEEAEIILDVTSYSGAEMEIGFNVSYVLDVNLKCNVMMMLTDSVS	
P.mirab.be	TNGQLKITANNPEQEEAEIILDVTSYSGAEMEIGFNVSYVLDVNLKCNVMMMLTDSVS	
H.infl.bet	KENQLKITASNTHEEEAEIILDVTSYSGAEMEIGFNVSYVLDVNLKCNVMMMLTDSVS	
P.put.beta	AAGQLKIQANNPEQEEAEIILDVTSYSGAEMEIGFNVSYVLDVNLKCNVMMMLTDSVS	
B.cap.beta	ENGKFKVLSDNQEEETAEDLFEIDYFGEKIEISINVVYLLDVINNIIKSENIALFLNKS	
*	
T.th.beta	PSLIWGDG-EGYRAVVVPLRVZ	(ID#108)
E.coli.bet	SVQIEDAASQSAAYVVMMPMRLZ	(ID#109)
P.mirab.be	SVQVENVASAAAAYVVMMPMRL-	(ID#110)
H.infl.bet	SCLIENCESSCEYVIMPMRL-	(ID#111)
P.put.beta	SALLQEAGNDDSSVVMMPMRL-	(ID#112)
B.cap.beta	SIQIEAENSSSNAYVVMMLLKR-	(ID#113)
*	

FIG. 22B

REPLACEMENT
SHEET

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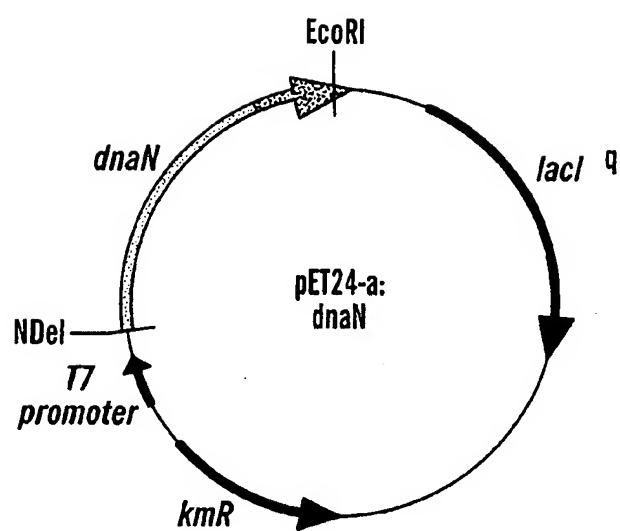


FIG. 23

REPLACEMENT
SHEET

39/83

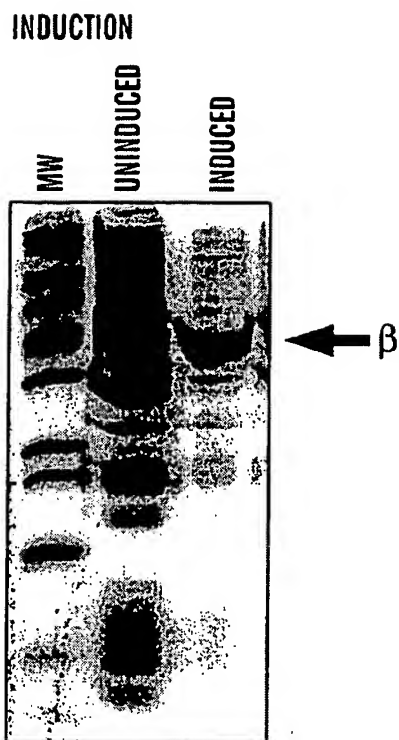


FIG. 24A

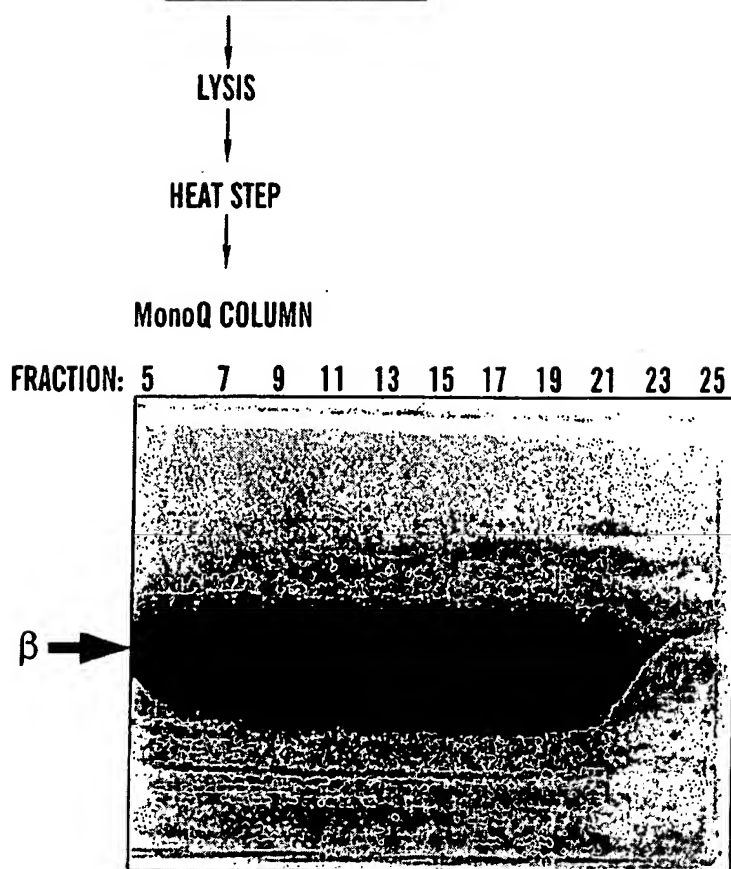


FIG. 24B

REPLACEMENT
SHEET

40/83

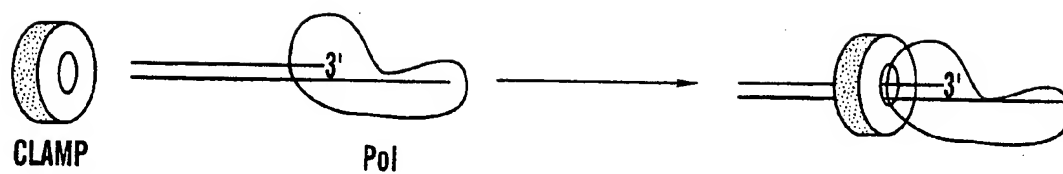


FIG. 25A

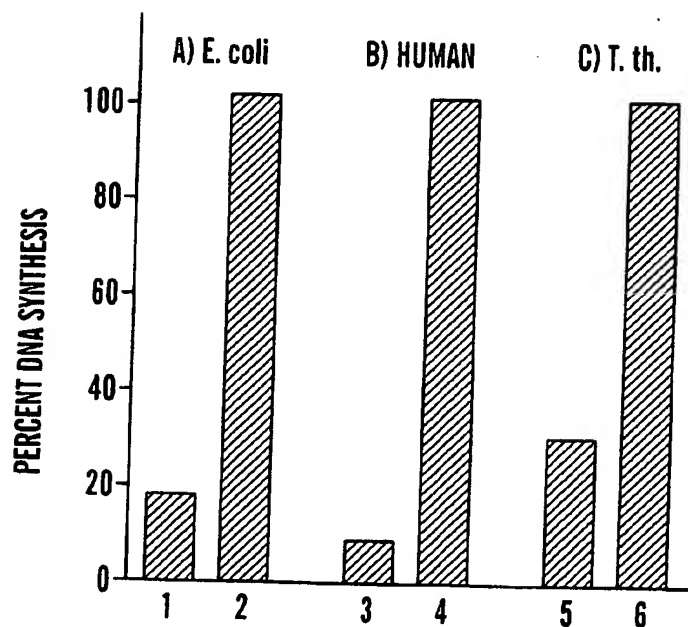


FIG. 25B

REPLACEMENT
SHEET

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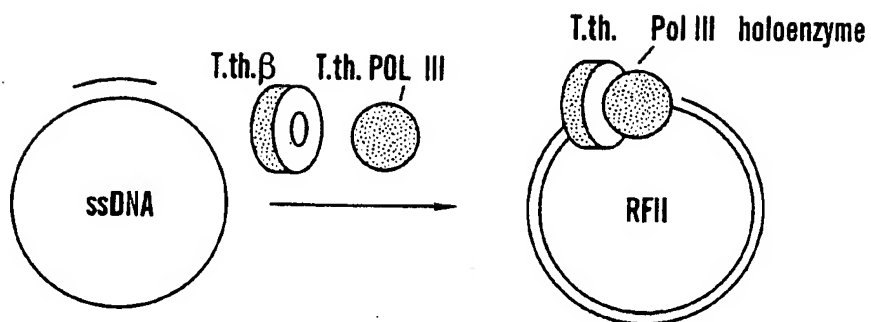


FIG. 26A

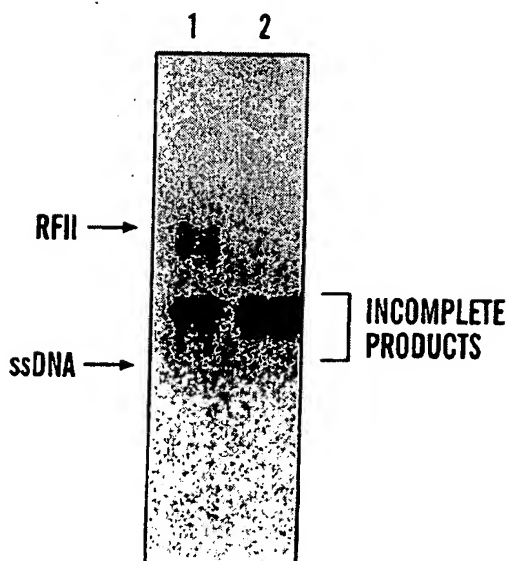


FIG. 26B

REPLACEMENT SHEET

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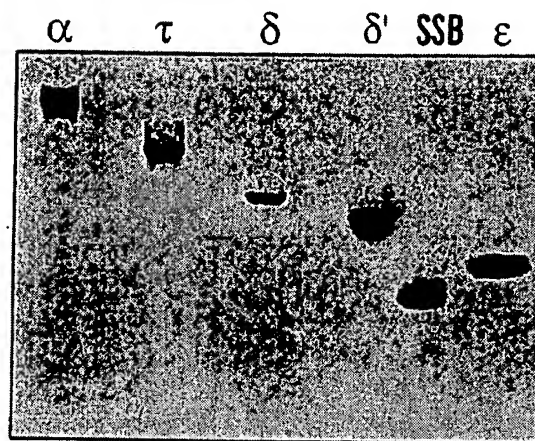


FIG. 27

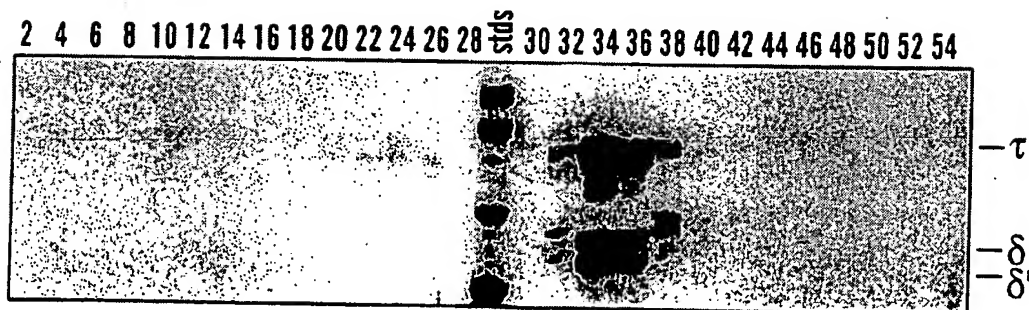


FIG. 28

REPLACEMENT SHEET

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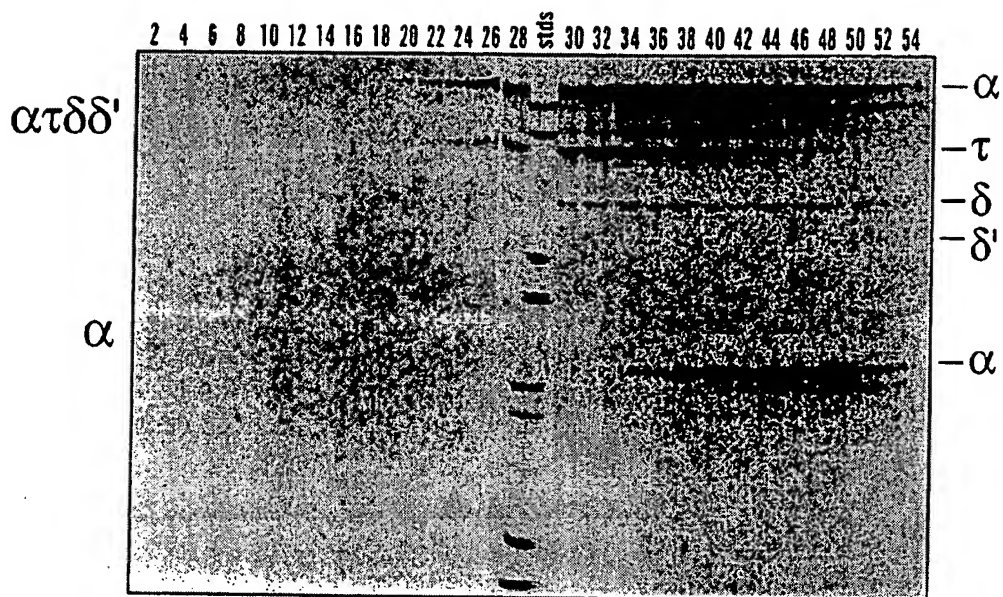


FIG. 29

REPLACEMENT
SHEET

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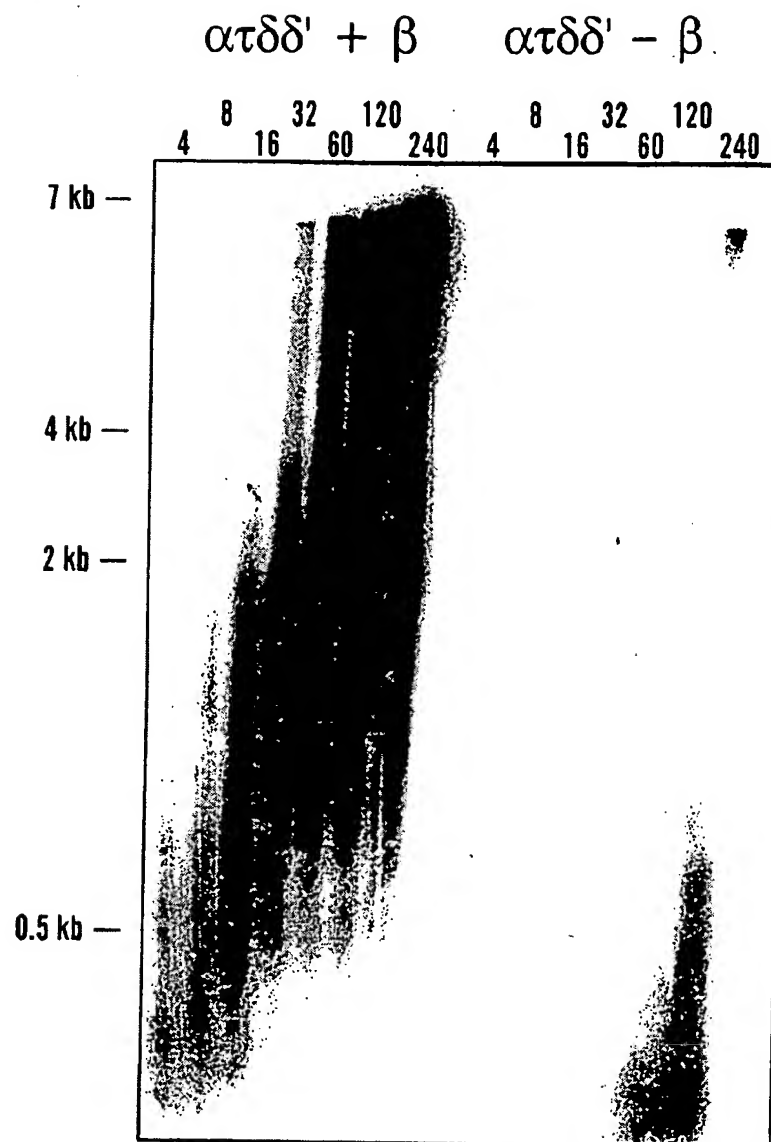


FIG. 30

REPLACEMENT
SHEET

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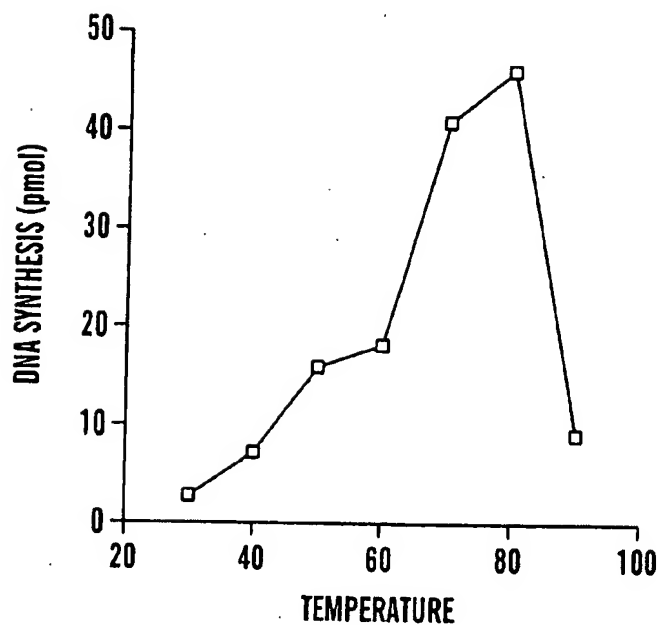


FIG. 31

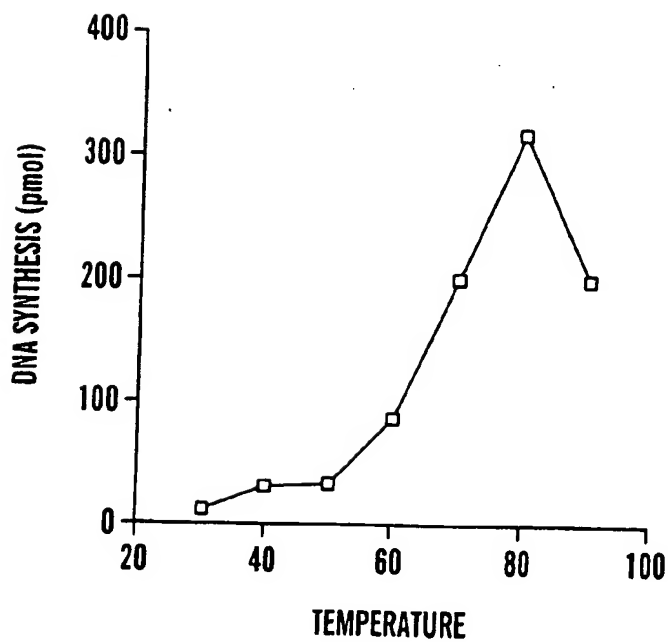


FIG. 32

REPLACEMENT SHEET

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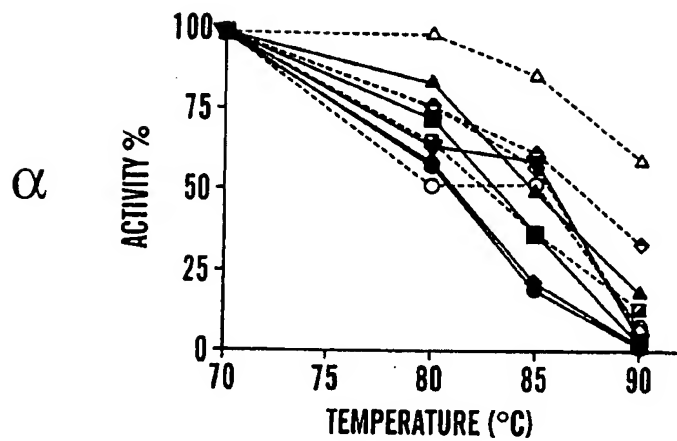


FIG. 33A

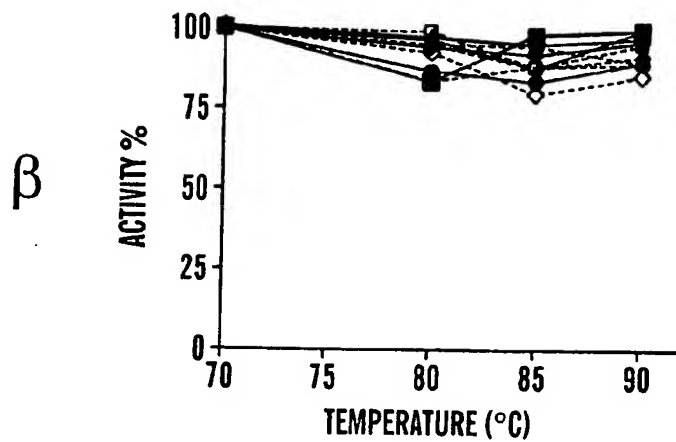


FIG. 33B

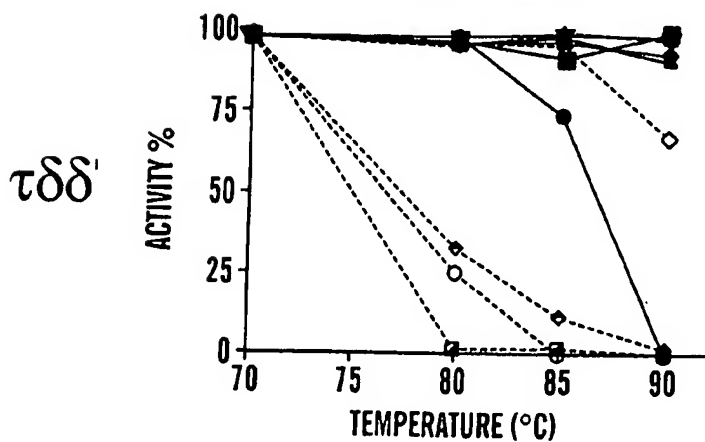


FIG. 33C

REPLACEMENT
SHEET

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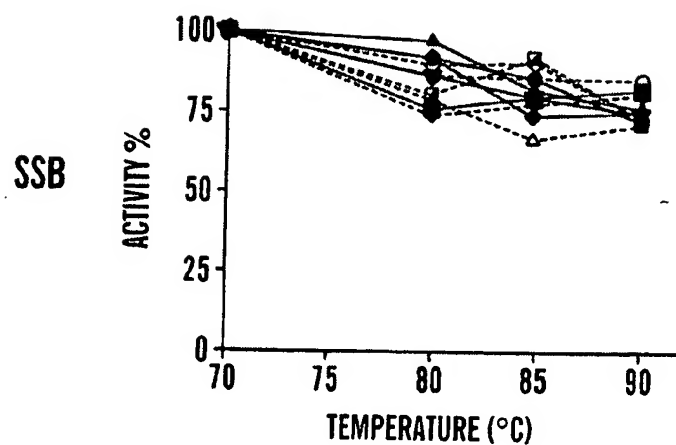


FIG. 33D

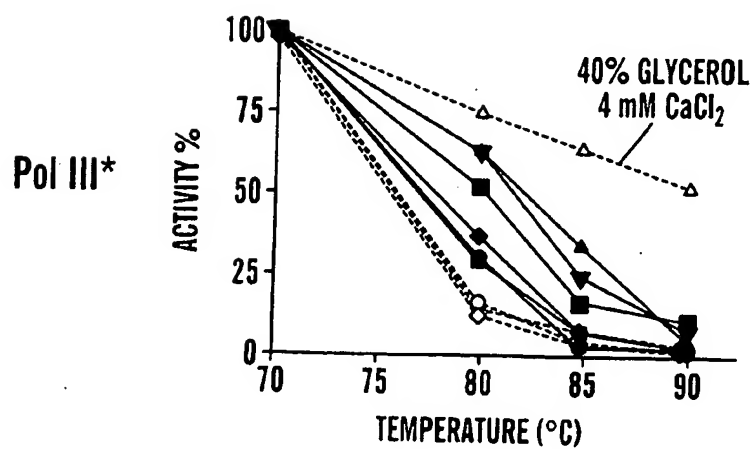


FIG. 33E

REPLACEMENT SHEET

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ATGAGTAAGGATTTTCGTCCACCTTCACCTGCACACCCAGTTCTCACTCCT	
GGACGGGGCTATAAAGATAGACGAGCTCGTGAAAAAGGCAAAGGAGTATG	100
GATACAAAGCTGTCGGAATGTCAGACCACGGAAACCTCTTCGGTTTCGTAT	
AAATTCTACAAAGCCCTGAAGGCGGAAGGAATTAAGCCCATAATCGGCAT	200
GGAAGCCTACTTTTACCACGGGTTTCGAGGTTTGACAGAAAGACTAAAACGA	
GCGAGGACAACATAACCGACAAGTACAACCACCACCTCATACTTATAGCA	300
AAGGACGAAAAGGTCTAAAGAACTTAATGAAGCTCTCAACCCTCGCCTAC	
AAAGAAGGTTTTTTACTACAAACCCAGAATTGATTACGAACTCCTTGAAAA	400
GTACGGGGAGGGCCTAATAGCCCTTACCGCATGCCTGAAAGGTGTTCCCA	
CCTACTACGCTTCTATAAACGAAGTGAAAAAGGCGGAGGAATGGGTAAAG	500
AAGTTCAAGGATATATTCGGAGATGACCTTTATTTAGAACTTCAAGCGAA	
CAACATTCCAGAACAGGAAGTGGCAAACAGGAACCTTAATAGAGATAGCCA	600
AAAAGTACGATGTGAAACTCATAGCGACGCAGGACGCCCACTACCTCAAT	
CCCGAAGACAGGTACGCCCACACGGTTCTTATGGCACTTCAAATGAAAAA	700
GACCATTACGAACTGAGTTCGGGAAACTTCAAGTGTTCAAACGAAGACC	
TTCACTTTGCTCCACCCGAGTACATGTGGAAAAAGTTTGAAGGTAAAGTTC	800
GAAGGCTGGGAAAAGGCACTCCTGAACACTCTCGAGGTAATGGAAAAGAC	
AGCGGACAGCTTTGAGATATTTGAAAACCTCCACCTACCTCCTTCCCAAGT	900
ACGACGTTCCGCCCCGACAAAACCTTGAGGAATACCTCAGAGAACTCGCG	
TACAAAGGTTTAAGACAGAGGATAGAAAGGGGACAAGCTAAGGATACTAA	1000
AGAGTACTGGGAGAGGCTCGAGTACGAACTGGAAGTTATAAACAAAATGG	
GCTTTGCGGGATACTTCTTGATAGTTCAGGACTTCATAAACTGGGCTAAG	1100
AAAAACGACATACCTGTTGGACCCGGAAGGGGAAGTGCTGGAGGTTCCCT	
CGTCGCATACGCCATCGGAATAACGGACGTTGACCCTATAAAGCACGGAT	1200
TCCTTTTTTGAGAGGTTCTTAAACCCCGAAAGGGTTTCCATGCCGGATATA	
GACGTGGATTTCTGTTCAGGACAACAGGGAAAAGGTCATAGAGTACGTAAG	1300
GAACAAGTACGGACACGACAACGTAGCTCAGATAATCACCTACAACGTAA	
TGAAGGCGAAGCAAACACTGAGAGACGTCGCAAGGGCCATGGGACTCCCC	1400
TACTCCACCGCGGACAAACTCGCAAAACTCATTCCTCAGGGGGACGTTCA	
GGGAACGTGGCTCAGTCTGGAAGAGATGTACAAAACGCCTGTGGAGGAAC	1500
TCCTTCAGAAGTACGGAGAACACAGAACGGACATAGAGGACAACGTAAAG	
AAGTTCAGACAGATATGCGAAGAAAGTCCGGAGATAAAACAGCTCGTTGA	1600
GACGGCCCTGAAGCTTGAAGGTCTCACGAGACACACCTCCCTCCACGCCG	
CGGGAGTGTTATAGCACCAAAGCCCTTGAGCGAGCTCGTTCCCCTCTAC	1700
TACGATAAAGAGGGCGAAGTCGCAACCCAGTACGACATGGTTCAGCTCGA	
AGAACTCGGTCTCCTGAAGATGGACTTCCTCGGACTCAAACCCCTCACAG	1800
AACTGAAACTCATGAAAGAACTCATAAAGGAAAGACACGGAGTGGATATA	
AACTTCCTTGAACTTCCCCTTGACGACCCGAAAGTTTACAAACTCCTTCA	1900
GGAAGGAAAAACCACGGGAGTGTTCCAGCTCGAAAGCAGGGGAATGAAAG	
AACTCCTGAAGAACTAAAGCCCGACAGCTTTGACGACATCGTTGCGGTC	2000
CTCGCACTCTACAGACCCGGACCTCTAAAGAGCGGACTCGTTGACACATA	
CATTAAGAGAAAGCACGGAAAAGAACCCGTTGAGTACCCCTTCCCGGAGC	2100
TTGAACCCGTCCTTAAGGAAACCTACGGAGTAATCGTTTATCAGGAACAG	
GTGATGAAGATGTCTCAGATACTTTCCGGCTTTACTCCCGGAGAGGCGGA	2200
TACCCTCAGAAAGGCGATAGGTAAGAAGAAAGCGGATTTAATGGCTCAGA	
TGAAAGACAAGTTCATACAGGGAGCGGTGGAAAGGGGATACCCTGAAGAA	2300
AAGATAAGGAAGCTCTGGGAAGACATAGAGAAGTTCGCTTCCCTACTCCTT	
CAACAAGTCTCACTCGGTAGCTTACGGGTACATCTCCTACTGGACCGCCT	2400

FIG. 34A

REPLACEMENT
SHEET

49/83

ACGTTAAAGCCCACTATCCCGCGGAGTTCTTCGCGGTAAAACTCACAAC	
GAAAAGAACGACAACAAGTTCCTCAACCTCATAAAAGACGCTAAACTCTT	2500
CGGATTTGAGATACTTCCCCCGACATAAACAAGAGTGATGTAGGATTTA	
CGATAGAAGGTGAAAACAGGATAAGGTTGCGGCTTGCGAGGATAAAGGGA	2600
GTGGGAGAGGAACTGCTAAGATAATCGTTGAAGCTAGAAAGAAGTATAA	
GCAGTTCAAAGGGCTTGCGGACTTCATAAACAAAACCAAGAACAGGAAGA	2700
TAAACAAGAAAGTCGTGGAAGCACTCGTAAAGGCAGGGGCTTTTGACTTT	
ACTAAGAAAAAGAGGAAAGAACTACTCGCTAAAGTGGCAAACCTCTGAAAA	2800
AGCATTAATGGCTACACAAAACCTCCCTTTTCGGTGCACCGAAAGAAGAAG	
TGGAAGAACTCGACCCCTTAAAGCTTGAAAAGGAAGTTCTCGGTTTTTAC	2900
ATTTCAAGGCACCCCTTGACAACCTACGAAAAGCTCCTCAAGAACCGCTA	
CACACCCATTGAAGATTTAGAAGAGTGGGACAAGGAAAGCGAAGCGGTGC	3000
TTACAGGAGTTATCACGGAACCTCAAAGTAAAAAAGACGAAAAACGGAGAT	
TACATGGCGGTCTTCAACCTCGTTGACAAGACGGGACTAATAGAGTGTGT	3100
CGTCTTCCCGGGAGTTTACGAAGAGGCAAAGGAACTGATAGAAGAGGACA	
GAGTAGTGGTAGTCAAAGGTTTTCTGGACGAGGACCTTGAAACGGAAAAT	3200
GTCAAGTTCGTGGTGAAAGAGGTTTTCTCCCCTGAGGAGTTCGCAAAGGA	
GATGAGGAATACCCCTTTATATATTCTTAAAAAGAGAGCAAGCCCTAAACG	3300
GCGTTGCCGAAAACTAAAGGGAATTATTGAAAACAACAGGACGGAGGAC	
GGATACAACCTGGTTCTCACGGTTGATCTGGGAGACTACTTCGTTGATTT	3400
AGCACTCCCACAAGATATGAACTAAAGGCTGACAGAAAGGTTGTAGAGG	
AGATAGAAAACTGGGAGTGAAGGTCATAATTTAGTAAATAACCCCTTACT	3500
TCCGAGTAGTCCCC	

FIG. 34B

REPLACEMENT SHEET

50/83

MSKDFVHLHLHTQFSLLDGAIKIDELVKKAKEGYKAVGMSDHGNLFGSY	
KFYKALKAEGIKPIIGMEAYFTTGSRFDRKTKTSEDNITDKYNHHLILIA	100
KDDKGLKNLMKLSTLAYKEGFYYPKPRIDYELLEKYGEGLIALTACLKGV	
TYYASINEVKKAEWVKKFKDIFGDDLYLELQANNIPEQEVANRNLIIEIA	200
KKYDVKLIATQDAHYLNPEDRYAHTVLMALQMKKTIHELSSGNFKCSNED	
LHFAPPEYMWKKFEGKFEGWEKALLNTLEVMEKTADSFEIFENSTYLLPK	300
YDVPPDKTLEEYLRELAYKGLRQRIERGQAKDTKEYWERLEYELEVINKM	
GFAGYFLIVQDFINWAKKNDIPVGPGRGSAGGSLVAYAIGITDVPDIKHG	400
FLFERFLNPERVSMPCDIDVDFCQDNREKVIEWVRNKYGHDNVAQIITYNV	
MKAKQTLRDVARAMGLPYSTADKLAKLIPQGDVQGTWLSLEEMYKTPVEE	500
LLQKYGEHRDIEDNVKKFRQICEESPEIKQLVETALKLEGLTRHTSLHA	
AGVVIAPKPLSELVPLYDDKEGEVATQYDMVQLEELGGLKMDFLGLKTLT	600
ELKLMKELIKERHGVDFINLELPLDDPKVYKLLQEGKTTGVFQLESRGMK	
ELLKKLKPDSFDDIVAVLALYRPGPLKSGLVDTYIKRKHGKEPVEYPPFE	700
LEPVLKETYGIVIVYQEQVMKMSQILSGFTPGEADTLRKAIGKKKADLMAQ	
MKDKFIQGAVERGYPEEKIRKLWEDIEKFASYSFNKSHSVAYGYISYWTA	800
YVKAHYPAEFFAVKLTTTEKNDNKFLNLIKDAKLFGFEILPPDINKSDVGF	
TIEGENRIRFGLARIKGVGEETAKIIVEARKKYKQFKGLADFINKTKNRK	900
INKKVVEALVKAGAFDFTKKKRKELLAKVANSEKALMATQNSLFGAPKEE	
VEELDPLKLEKEVLGFYISGHPLDNYEKLKKNRYTPIEDLEEWDKESEAV	1000
LTGVITELKVKKTKNGDYMAVFNLVDKTGLIECVVFPGVYEEAKELIEED	
RVVVVKGFLDEDLETENVKFVVKEVFSPEEFAKEMRNTLYIFLKREQALN	1100
GVAEKLKGIIEENRTEDGYNLVLTVDLGDYFVDLALPQDMKLKADRKVVE	
EIEKLGVKVII	1161

FIG. 35

REPLACEMENT SHEET

51/83

ATGAACTACGTTCCCTTCGCGAGAAAGTACAGACCGAAATTCTTCAGGGA	100
AGTAATAGGACAGGAAGCTCCCGTAAGGATACTCAAAAACGCTATAAAAA	
ACGACAGAGTGGCTCACGCCTACCTCTTTGCCGGACCGAGGGGGGTGGG	200
AAGACGACTATTGCAAGAATTCTCGCAAAAGCTTTGAACTGTAAAAATCC	
CTCCAAAGGTGAGCCCTGCGGTGAGTGCGAAAACCTGCAGGGAGATAGACA	300
GGGGTGTGTTCCCTGACTTAATTGAAATGGATGCCGCCTCAAACAGGGGT	
ATAGACGACGTAAGGGCATTAAAAGAAGCGGTCAATTACAAACCTATAAA	400
AGGAAAGTACAAGGTTTACATAATAGACGAAGCTCACATGCTCACGAAAG	
AAGCTTTCAACGCTCTCTTAAAAACCCTCGAAGAGCCCCCTCCAGAACT	500
GTTTTCGTCCCTTGTACCACGGAGTACGACAAAATTCTTCCCACGATACT	
CTCAAGGTGTCAGAGGATAATCTTCTCAAAGGTAAGAAAGGAAAAAGTAA	600
TAGAGTATCTAAAAAGATATGTGAAAAGGAAGGGATTGAGTGCGAAGAG	
GGAGCCCTTGAGGTTCTGGCTCATGCCTCTGAAGGGTGCATGAGGGATGC	700
AGCCTCTCTCCTGGACCAGGCGAGCGTTTACGGGGAAGGCAGGGTAACAA	
AAGAAGTAGTGGAGAACTTCCTCGGAATTCTCAGTCAGGAAAGCGTTAGG	800
AGTTTTCTGAAATTGCTTCTGAACTCAGAAGTGGACGAAGCTATAAAGTT	
CCTCAGAGAACTCTCAGAAAAGGGCTACAACCTGACCAAGTTTTGGGAGA	900
TGTTAGAAGAGGAAGTGAGAAACGCAATTTTAGTAAAGAGCCTGAAAAAT	
CCCGAAAGCGTGGTTCAGAACTGGCAGGATTACGAAGACTTCAAAGACTA	1000
CCCTCTGGAAGCCCTCCTCTACGTTGAGAACCTGATAAACAGGGGTAAAG	
TTGAAGCGAGAACGAGAGAACCCTTAAGAGCCTTTGAACTCGCGGTAAATA	1100
AAGAGCCTTATAGTCAAAGACATAATTCCCGTATCCCAGCTCGGAAGTGT	
GGTAAAGGAAACCAAAAAGGAAGAAAAGAAAGTTGAAGTAAAAGAAGAGC	1200
CAAAAGTAAAAGAAGAAAAACCAAGGAGCAGGAAGAGGACAGGTTCCAG	
AAAGTTTTAAACGCTGTGGACGGCAAAATCCTTAAAGAATACTTGAAGG	1300
GGCAAAAAGGGAAGAAAGAGACGGAAAAATCGTCCTAAAGATAGAAGCCT	
CTTATCTGAGAACCATGAAAAAGGAATTTGACTCACTAAAGGAGACTTTT	1400
CCTTTTTTTAGAGTTTGAACCCGTGGAGGATAAAAAAAACCTCAGAAGTC	
CAGCGGGACGAGGCTGTTTTAAAGGTAAAGGAGCTCTTCAATGCAAAAAT	1500
ACTCAAAGTACGAAGTAAAAGCTAAGGTCATAAAGGTGAGAATGCCCGTG	
GAAGAGATAGGGCTGTTTAACGCACTAATAGACGGCTTGCCCAGGTACGC	1600
ACTCACGAGGACGAAGGAAAAGGGAAAGGGAGAAGTTTTCGTTTTAGCGA	
CTCCTTATAAAGTCAAGGAATTGATGGAAGCTATGGAGGGTATGAAAAAA	1700
CACATAAAGGATTTAGAAATCCTCGGAGAGACGGATGAGGATTTAACTTT	
TTAAAGTATGGGTGTATCTGAGCAAAGGTTTAAAGCTAAAAACAAACCTGA	1800
AACCCGCAGGGGACCAGCCGAAAGCCATAAAAAAACTCCTTGAAAACCTA	
AGGAAAGGCGTAAAGAACAACACTTCTCGGAGTCACGGGAAGCGGAAA	1900
GACTTTTACTCTAGCAAACGTAATAGCGAAGTACAACAACCAACTCTTG	
TGGTAGTTCACAACAAAATTCTCGCGGCACAGCTATACAGGGAGTTTAAA	2000
GAACTATTCCCTGAAAACGCTGTAGAGTACTTTGTCTCTTACTACGACTA	
TTACCAACCTGAAGCCTACATTCCCGAAAAAGATTTATACATAGAAAAGG	2100
ACGCGAGTATAAACGAAAGCTGGAACGTTTCAGACACTCCGCCACGATAT	
CCGTTCTAGAAAGGAGGGACGTTATAGTAGTTGCTTCAGTTTCTTGCATA	2200
TACGGACTCGGGAAACCTGAGCACTACGAAAACCTGAGGATAAACTCCA	
AAGGGGAATAAGACTGAACTTGAGTAAGCTCCTGAGGAACTCGTTGAGC	2300
TAGGATATCAGAGAAATGACTTTGCCATAAAGAGGGCTACCTTCTCGGTT	
AGGGGAGACGTGGTTGAGATAGTCCCTTCTCACACGGAAGATTACCTCGT	2400
GAGGGTAGAGTTCTGGGACGACGAAGTTGAAAGAATAGTCCTCATGGACG	
CTCTGAAC	

FIG. 36

REPLACEMENT
SHEET

52/83

MNYVPFARKYRPKFFREVIGQEAPVRILKNAIKNDRVAHAYLFAGPRGVG	
KTTIARILAKALNCKNPSKGEPCGECENCREIDRGVFPDLIEMDAASNRG	100
IDDVRLKEAVNYKPIKGKYKVYIIDEAHMLTKEAFNALLKTLEPPPT	
VFVLCTTEYDKILPTILSRCQRIIFSKVRKEKVIEYLKKICEKEGIECEE	200
GALEVLAHASEGCMRDAASLLDQASVYGEGRVTKEVVENFLGILSQESVR	
SFLKLLLNSEVDEAIKFLRELSEKGYNLTKEWEMLEEEVRNAILVKSLKN	300
PESVVQNWQDYEDFKDYPLEALLYVENLINRGKVEARTREPLRAFELAVI	
KSLIVKDIIPVSQLGSSVVKETKKEEKKEVKEEPKVKEEKPKQEEDRFQ	400
KVLNAVDGKILKRILEGAKREERDGIIVLKIEASYLRTMKKEFDLSKET	
PFLEFEPVEDKKKPQKSSGTRLF	473

FIG. 37

REPLACEMENT SHEET

53/83

ATGCGCGTTAAGGTGGACAGGGAGGAGCTTGAAGAGGTTCTTAAAAAAGC	
AAGAGAAAGCACGGAAAAAAGCCGCACTCCCGATACTCGCGAACTTCT	100
TACTCTCCGCAAAAGAGGAAAACTTAATCGTAAGGGCAACGGACTTGGA	
AACTACCTTGTAAGTCTCCGTAAAGGGGGAGGTTGAAGAGGAAGGAGAGGT	200
TTGCGTCCACTCTCAAAAACTCTACGATATAGTCAAGAACTTAAATTCCG	
CTTACGTTTACCTTCATACGGAAGGTGAAAACTCGTCATAACGGGAGGA	300
AAGAGTACGTACAACTTCCGACAGCTCCCGCGGAGGACTTTCCCGAATT	
TCCAGAAATCGTAGAAGGAGGAGAAACACTTTTCGGGAAACCTTCTCGTTA	400
ACGGAATAGAAAAGGTAGAGTACGCCATAGCGAAGGAAGAAGCGAACATA	
GCCCTTCAGGGAATGTATCTGAGAGGATACGAGGACAGAATTCACTTTGT	500
GTTTCGGACGGTCACAGGCTTGCACTTTATGAACCTCTACGTAAACATTGA	
AAAGAGTGAAGACGAGTCTTTTGCTTACTTCTCCACTCCCGAGTGGAAC	600
TCGCCGTTAGCTCCTGGAAGGAGAATTCCCGGACTACATGAGTGTATCC	
CTGAGGAGTTTTTCGGCGGAAGTCTTGTTTGAGACAGAGGAAGTCTTAAAG	700
GTTTTTAAAGAGGTTGAAGGCTTTAAGCGAAGGAAAAGTTTTTCCCGTGAA	
GATTACCTTAAGCGAAAACCTTGCCATCTTTGAGTTCGCGGATCCGGAGT	800
TCGGAGAAGCGAGAGAGGAAATTGAAGTGGAGTACACGGGAGAGCCCTTT	
GAGATAGGATTCAACGGAAATACCTTATGGAGGCGCTTGACGCCTACGAC	900
AGCGAAAGAGTGTTGGTTCAAGTTCACAACCCCCGACACGGCCACTTTATT	
GGAGGCTGAAGATTACGAAAAGGAACCTTACAAGTGCATAATAATGCCGA	1000
TGAGGGTGTAGCCATGAAAAAGCTTTAATCTTTTTATTGAGCTTGAGCC	
TTTTAATTCCTGCGTTTAGCGAAGCCAAACCCAAGTCTTC	1090

FIG. 38

MRVKVDREELEEV LKKARESTEKKAALPILANFLLSAKEENLIVRATDLE	
NYLVVSVKGEVEEEGEV CVHSQKLYDIVKNLNSAYVYLHTEGEKLVITGG	100
KSTYKLPTAPAEDFPEFPEIVEGGETLSGNLLVNGIEKVEYAIAKEEANI	
ALQGMYL RGYEDRIHFVGS DGHRLALYEPLGEFSKELLIPR KSLKVLKKL	200
ITGIEDV NIEKSEDES FAYFSTPEWKLA VRLLEGEFPDYMSV IPEEFSAE	
VLFE TEEVLKVLKRLKALSEGKVFPVKITLSENLA IFEFADPEFGEAREE	300
IEVEYTGE PF EIGFNGKYLMEALDAYDSERVWFKFTTPDTATLLEAEDYE	
KEPYKCIIMPMRV	363

FIG. 39

REPLACEMENT SHEET

54/83

GTGGAAACCACAATATTCCAGTTCCAGAAAACCTTTTTTCACAAAACCTCC	
GAAGGAGAGGGTCTTCGTCCTTCATGGAGAAGAGCAGTATCTCATAAGAA	100
CCTTTTTGTCTAAGCTGAAGGAAAAGTACGGGGAGAATTACACGGTTCTG	
TGGGGGGATGAGATAAGCGAGGAGGAATTCTACACTGCCCTTTCCGAGAC	200
CAGTATATTTCGGCGGTTCAAAGGAAAAAGCGGTGGTCATTTACAACCTTCG	
GGGATTTCCCTGAAGAAGCTCGGAAGGAAGAAAAAGGAAAAAGAAAGGCTT	300
ATAAAAGTCCTCAGAAACGTAAAGAGTAACTACGTATTTATAGTGACGA	
TGCGAAACTCCAGAAACAGGAACTTTCTTCGGAACCTCTGAAATCCGTAG	400
CGTCTTTTCGGCGGTATAGTGGTAGCAAACAGGCTGAGCAAGGAGAGGATA	
AAACAGCTCGTCCTTAAGAAGTTCAAAGAAAAAGGGATAAACGTAGAAAA	500
CGATGCCCTTGAATACCTTCTCCAGCTCACGGGTTACAACCTTGATGGAGC	
TCAAACCTTGAGGTTGAAAAACTGATAGATTACGCAAGTGAAAAGAAAATT	600
TTAACACTCGATGAGGTAAAGAGAGTAGCCTTCTCAGTCTCAGAAAACGT	
AAACGTATTTGAGTTCGTTGATTTACTCCTCTTAAAAGATTACGAAAAGG	700
CTCTTAAAGTTTTGGACTCCCTCATTTCCTTCGGAATACACCCCCTCCAG	
ATTATGAAAATCCTGTCCTCCTATGCTCTAAAACCTTTACACCCTCAAGAG	800
GCTTGAAGAGAAGGGAGAGGACCTGAATAAGGCGATGGAAAGCGTGCGAA	
TAAAGAACAACCTTTCTCAAGATGAAGTTCAAATCTTACTTAAAGGCAAAC	900
TCTAAAGAGGACTTGAAGAACCTAATCCTCTCCCTCCAGAGGATAGACGC	
TTTTTCTAAACCTTACTTTTCAGGACACAGTGCAGTTGCTGGGGATTTCTT	1000
GACCTCAAGACTGGAGAGGGAAGTTGTGAAAAATACTTCTCATGGTGGAT	
AATCTTTTTTATGAAGTTTGCGGTTTGCGTTTTTCCCGGTTCT	1093

FIG. 40

VETTIFQFQKTFFTKPPKERVFLHGEEQYLIRTFLSKLKEYGENYTVL	
WGDEISEEEFYTALSETSIFGGSKEKAVVIYNFGDFLKKLGRKKKEKERL	100
IKVLRNVKSNYVFIVYDAKLQKQELSSEPLKSVASFGGIVVANRLSKERI	
KQLVLKKFKEKGINVENDALEYLLQLTGYNLMELKLEVEKLIDYASEKKI	200
LTLDEVKRVAFSVSENVNVFEFVDLLLLLDYKALKVLDLSISFGIHPLO	
IMKILSSYALKLYTLKRLEEKGEDLNKAMESVGKNNFLKMKFKSYLKAN	300
SKEDLKNLILSLQRIDAFSKLYFQDTVQLLRDFLTSRLEREVVKNTSHGG	

FIG. 41

REPLACEMENT SHEET

55/83

ATGGAAAAAGTTTTTTTGGAAAACTCCAGAAAACCTTGCACATACCCGG	
AGGACTCCTTTTTTTACGGCAAAGAAGGAAGCGGAAAGACGAAAACAGCTT	100
TTGAATTTGCAAAGGTATTTTATGTAAGGAAAACGTACCTGGGGATGCG	
GAAGTTGTCCCTCCTGCAAACACGTAAACGAGCTGGAGGAAGCCTTCTTT	200
AAAGGAGAAATAGAAGACTTTAAAGTTTATAAGACAAGGACGGTAAAAAG	
CACTTCGTTTACCTTATGGGCGAATCATCCCGACTTTGTGGTAATAATCCC	300
GAGCGGACATTACATAAAGATAGAACAGATAAAGGGAAGTTAAGAACTTTG	
CCTATGTGAAGCCCGCACTAAGCAGGAGAAAAAGTAATTATAATAGACGAC	400
GCCACGCGATGACCTCTCAGGCGGCAAACGCTCTTTTAAAGGTATTGGA	
AGAGCCACCTGCGGACACCACCTTTATCTTGACCACGAACAGGCGTTCTG	500
CAATCCTGCCGACTATCCTCTCCAGAACTTTTCAAGTGGAGTTCAAGGGC	
TTTTCAGTAAAAGAGGTTATGGAAATAGCGAAAGTAGACGAGGAAATAGC	600
GAAACTCTCTGGAGGCAGTCTAAAAAGGGCTATCTTACTAAAGGAAAACA	
AAGATATCCTAAACAAAGTAAAGGAATTCTTGAAAACGAGCCGTTAAAA	700
GTTTACAAGCTTGCAAGTGAATTCGAAAAGTGGGAACCTGAAAAGCAAAA	
ACTCTTCCTTGAAATTATGGAAGAATTGGTATCTCAAAAATTGACCGAAG	800
AGAAAAAAGACAATTACACCTACCTTCTTGATACGATCAGACTCTTTAAA	
GACGGACTCGCAAGGGGTGTAAACGAACCTCTGTGGCTGTTTACGTTAGC	900
CGTTCAGGCGGATTAATAAACCGTTATTGATTCCGTAACATTTAAACCTT	
AATCTAAATTATGAGAGCCTTTGAAGGAGGTCTGGTATGGAAAATTTGAA	1000
GATTAGATATATAGATACGAGGAAGATAGGAACCGTGAGCGGTGTAAAAG	
T	1051

FIG. 42

MEKVFLEKLQKTLHIPGGLLFYKGESGKTKTAFEFAKGILCKENVPWGC	
GSCPSCKHVNELEEAFKGEIEDFKVYKDKDGKKHVFVYLMGEHPDFVVII	100
PSGHYIKIEQIREVKNFAYVKPALSRKVIIDDAHAMTSQAANALLKVL	
EEPPADTTFILTTNRRSAILPTILSRTFQVEFKGFSVKEVMEIAKVDEEI	200
AKLSGGSLLKRAILLKENKDILNKVKEFLENEPLKVYKLASEFEKWEPEKQ	
KLFLEIMEELVSQKLTEKKDNYTYLLDTIRLFKDGLARGVNEPLWLFTL	300
AVQAD	

FIG. 43

REPLACEMENT
SHEET

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ATGAACTTCCTGAAAAAGTTCCTTTTACTGAGAAAAGCTCAAAAGTCTCC	
TTACTTCGAAGAGTTCTACGAAGAAATCGATTTGAACCAGAAGGTGAAAG	100
ATGCAAGGTTTGTAAGTTTTGACTGCGAAGCCACAGAACTCGACGTAAAG	
AAGGCAAAACTCCTTTCAATAGGTGCGGTTGAGGTTAAAAACCTGGAAAT	200
AGACCTCTCTAAATCTTTTACGAGATACTCAAAAGTGACGAGATAAAGG	
CGGCGGAGATACATGGAATAACCAGGGAAGACGTTGAAAAGTACGGAAAG	300
GAACCAAAGGAAGTAATATACGACTTTCTGAAGTACATAAAGGGAAGCGT	
TCTCGTTGGCTACTACGTGAAGTTTGACGTCTCACTCGTTGAGAAGTACT	400
CCATAAAGTACTTCCAGTATCCAATCATCAACTACAAGTTAGACCTGTTT	
AGTTTCGTGAAGAGAGAGTACCAGAGTGGCAGGAGTCTTGACGACCTTAT	500
GAAGGAACTCGGTGTAGAAATAAGGGCAAGGCACAACGCCCTTGAAGATG	
CCTACATAACCGCTCTTCTTTTCTTAAAGTACGTTTACCCGAACAGGGAG	600
TACAGACTAAAGGATCTCCCGATTTTCCTT	

FIG. 44

MNFLKKFLLLRKAQKSPYFEEFYEEIDLNQKVKDARFVVFDCATELDVK	
KAKLLSIGAVEVKNLEIDLKSFYEILKSDEIKAAEIHGITREDVEKYGK	100
EPKEVIYDFLKYIKGSVLVGYYVKFDVSLVEKYSIKYFQYPIINYKLDLF	
SFVKREYQSGRSLDDLMKELGVEIRARHNALEDAYITALLFLKYVYPNRE	200
YRLKDLPIFL	

FIG. 45

REPLACEMENT
SHEET

57/83

ATGCTCAATAAGGTTTTTATAATAGGAAGACTTACGGGTGACCCCGTTAT	
AACTTATCTACCGAGCGGAACGCCCGTAGTAGAGTTTACTCTGGCTTACA	100
ACAGAAGGTATAAAAACCAGAACGGTGAATTTTCAGGAGGAAAGTCACTTC	
TTTGACGTAAAGGCGTACGGAAAAATGGCTGAAGACTGGGCTACACGCTT	200
CTCGAAAGGATACCTCGTACTCGTAGAGGGAAGACTCTCCCAGGAAAAGT	
GGGAGAAAGAAGGAAAGAAGTTCTCAAAGGTCAGGATAATAGCGGAAAAC	300
GTAAGATTAATAAACAGGCCGAAAGGTGCTGAACTTCAAGCAGAAGAAGA	
GGAGGAAGTTCCTCCCATGAGGAGGAAATTGAAAAACTCGGTAAAGAGG	400
AAGAGAAGCCTTTTACCGATGAAGAGGACGAAATACCTTTTAAATTTGA	
GGAGGTTAAAGTATGGTAGTGAGAGCTCCTAAGAAGAAAGTTTGTATGTA	500
CTGTGAACAAAAGAGAGAGCCAGATT	

FIG. 46

MLNKVFIIGRLTGDPVITYLPSGTPVVEFTLAYNRRYKNQNGEFQEESHF	
FDVKAYGKMAEDWATRFSGYLVLEGRLSQEKWEKEGKKFSKVRIIAEN	100
VRLINRPKGAELOAEIEEEVPPIEEEIEKLGKEEEKPFTDEEDEIPF	

FIG. 47

REPLACEMENT SHEET

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ATGCAATTTGTGGATAAACTTCCCTGTGACGAATCCGCCGAGAGGGCGGT	
TCTTGGCAGTATGCTTGAAGACCCCGAAAACATACCTCTGGTACTTGAAT	100
ACCTTAAAGAAGAAGACTTCTGCATAGACGAGCACAAGCTACTTTTCAGG	
GTTCTTACAAACCTCTGGTCCGAGTACGGCAATAAGCTCGATTTCGTATT	200
AATAAAGGATCACCTTGAAAAGAAAACTTACTCCAGAAAATACCTATAG	
ACTGGCTCGAAGAACTCTACGAGGAGGCGGTATCCCCTGACACGCTTGAG	300
GAAGTCTGCAAAATAGTAAAACAACGTTCCGCACAGAGGGCGATAATTCA	
ACTCGGTATAGAACTCATTCACAAAGGAAAGGAAAAACAAAGACTTTCACA	400
CATTAATCGAGGAAGCCCAGAGCAGGATATTTTCCATAGCGGAAAGTGCT	
ACATCTACGCAGTTTTACCATGTGAAAGACGTTGCGGAAGAAGTTATAGA	500
ACTCATTTATAAATTCAAAGCTCTGACAGGCTAGTCACGGGACTCCCAA	
GCGGTTTCACGGAACCTCGATCTAAAGACGACGGGATTCCACCCTGGAGAC	600
TTAATAATACTCGCCGCAAGACCCGGTATGGGGAAAACCGCCTTTATGCT	
CTCCATAATCTACAATCTCGCAAAAGACGAGGGAAAACCCCTCAGCTGTAT	700
TTTCCTTGGAATGAGCAAGGAACAGCTCGTTATGAGACTCCTCTCTATG	
ATGTCGGAGGTCCCACTTTTCAAGATAAGGTCTGGAAGTATATCGAATGA	800
AGATTTAAAGAAGCTTGAAGCAAGCGCAATAGAACTCGCAAAGTACGACA	
TATACCTCGACGACACACCCGCTCTCACTACAACGGATTTAAGGATAAGG	900
GCAAGAAAGCTCAGAAAGGAAAAGGAAGTTGAGTTCGTGGCGGTGGACTA	
CTTGCAACTTCTGAGACCGCCAGTCCGAAAGAGTTCAAGACAGGAGGAAG	1000
TGGCAGAGGTTTCAAGAACTTAAAGCCCTTGCAAAGGAACTTCACATT	
CCCGTTATGGCACTTGCGCAGCTCTCCCGTGAGGTGGAAAAGAGGAGTGA	1100
TAAAAGACCCCAGCTTGCGGACCTCAGAGAATCCGGACAGATAGAACAGG	
ACGCAGACCTAATCCTTTTCTCCACAGACCCGAGTACTACAAGAAAAAG	1200
CCAAATCCCGAAGAGCAGGGTATAGCGGAAGTGATAATAGCCAAGCAAAG	
GCAAGGACCCACGGACATTGTGAAGCTCGCATTATTAAGGAGTACACTA	1300
AGTTTGCAAACCTAGAAGCCCTTCTGAACAACCTCCTGAAGAAGAGGAA	
CTTTCCGAAATTATTGAAACACAGGAGGATGAAGGATTCGAAGATATTGA	1400
CTTCTGAAAATTAAGGTTTTATAATTTTATCTTGGCTATCCGGGGTAGCT	
CAATCGGCAGAGCGGGTGGCTG	1472

FIG. 48

MQFVDKLPCEDESAERAVLGSMLDPENIPLVLEYLKEEDFCIDEHKLLFR	
VLTNLWSEYGNKLDVFLIKDHLEKKNLLQKIPIDWLEELYEEAVSPDTLE	100
EVCKIVKQRSAQRAIIQLGITSTQFYHVKDVAEEVIELIYKFKSSDRLVT	
GLPSGFTELDLKTTFGHPGDLIIILARPFGMGKTAFMLSIIYNLAKDEGKP	200
SAVFSLEMSKEQLVMRLLSMMSEVPLFKIRSGSISNEDLKKLEASAIELA	
KYDIYLDLTPALTTTDLRIRARKLRKEKEVEFVAVDYLQLLRPPVRKSSR	300
QEEVAEVSRLKALAKELHIPVMALAQLSREVEKRSDKRPQLADLRESGQ	
IEQDADLILFLHRPEYYKKKPNPEEQGIAEVIIAKQRQGPTDIVKLAFIK	400
EYTKFANLEALPEQPPEEEELSEIIETQEDEGFEDIDF	

FIG. 49

REPLACEMENT SHEET

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ATGTCCTCGGACATAGACGAACTTAGACGGGAAATAGATATAGTAGACGT	
CATTTCCGAATACTTAAACTTAGAGAAGGTAGGTTCCAATTACAGAACGA	100
ACTGTCCCTTTTACCCTGACGATACACCCTCCTTTTACGTGTCTCCAAGT	
AAACAAATATTCAAGTGTTTCGGTTGCGGGGTAGGGGAGACGCGATAAA	200
GTTTCGTTTCCCTTTACGAGGACATCTCCTATTTTGAAGCCGCCCTTGAAC	
TCGCAAAACGCTACGGAAAGAAATTAGACCTTGAAAAGATATCAAAAGAC	300
GAAAAGGTATACGTGGCTCTTGACAGGGTTTGTGATTTCTACAGGGAAAG	
CCTTCTCAAAAACAGAGAGGCAAGTGAGTACGTAAAGAGTAGGGGAATAG	400
ACCCTAAAGTAGCGAGGAAGTTTGATCTTGGGTACGCACCTTCCAGTGAA	
GCACTCGTAAAAGTCTTAAAGAGAACGATCTTTTAGAGGCTTACCTTGA	500
AACTAAAACCTCCTTTCTCCTACGAAGGGTGTTTACAGGGATCTCTTTC	
TTCGGCGTGTTCGTGATCCCGATAAAGGATCCGAGGGGAAGAGTTATAGGT	600
TTCGGTGGAAGGAGGATAGTAGAGGACAAATCTCCCAAGTACATAAACTC	
TCCAGACAGCAGGGTATTTAAAAAGGGGAGAACTTATTCGGTCTTTACG	700
AGGCAAAGGAGTATATAAAGGAAGAAGGATTTGCGATACTTGTGGAAGGG	
TACTTTGACCTTTTGAGACTTTTTTCCGAGGGAATAAGGAACGTTGTTGC	800
ACCCCTCGGTACAGCCCTGACCCAAAATCAGGCAAACCTCCTTTCCAAGT	
TCACAAAAAAGGTCTACATCCTTTACGACGGAGATGATGCGGGAAGAAAG	900
GCTATGAAAAGTGCCATTCCCCTACTCCTCAGTGCAGGAGTGGAAGTTTA	
TCCCGTTTACCTCCCCGAAGGATACGATCCCGACGAGTTTATAAAGGAAT	1000
TCGGGAAAGAGGAATTAAGAAGACTGATAAACAGCTCAGGGGAGCTCTTT	
GAAACGCTCATAAAAACCGCAAGGGAAAACCTTAGAGGAGAAAACGCGTGA	1100
GTTTCAGGTATTATCTGGGCTTTATTTCCGATGGAGTAAGGCGCTTTGCTC	
TGGCTTCGGAGTTTCACACCAAGTACAAAGTTCCTATGGAAATTTTATTA	1200
ATGAAAATTGAAAAAATTTCTCAAGAAAAAGAAATTAAACTCTCCTTTAA	
GGAAAAAATCTTCTGAAAGGACTGATAGAATTAACCAAAAATAGACC	1300
TTGAAGTCCTGAACTTAAGTCCTGAGTTAAAGGAACTCGCAGTTAACGCC	
TTAAACGGAGAGGAGCATTTACTTCCAAAAGAAGTTCTCGAGTACCAGGT	1400
GGATAACTTGGAGAACTTTTTTAACAACATCCTTAGGGATTTACAAAAAT	
CTGGGAAAAAGAGGAAGAAAAGAGGGTTGAAAAATGTAAATACTTAATTA	1500
ACTTTAATAAATTTTTAGAGTTAGGA	

FIG. 50

MSSDIDELRREIDIVDVISEYLNLEKVGSNYRTNCPFHPDDTPSFYVSPS	
KQIFKFCGCGVGDAIKFVSLYEDISYFEAALELAKRYGKKLDLEKISKD	100
EKVYVALDRVCDFYRESLLKNREASEYVKSREGIDPKVARKFDLGYAPSSE	
ALVKVLKENDLLEAYLETKNLLSPTKGVYRDLFLRRVVIPIKDPRGRVIG	200
FGRRIVEDKSPKYINSPDSRVFKKGENLFGLYEAKYIKEEGFAILVEG	
YFDLLRLRFSEGIRNVVAPLGTALTQNZANLLSKFTKKVYILYDGD DAGRK	300
AMKSAIPLLLSAGVEVYPVYLPEGYDPDEFIKEFGKEELRRLINSSGELF	
ETLIK TARENLEEK TREFRYLGFISDGVRRFALASEFHTKYKVPMEILL	400
MKIEKNSQEKEIKLSFKEKIFLKGLIELKPKIDLEVLNLSPELKELAVNA	
LNGEEHLLPKEVLEYQVDNLEKLFNNILRDLQKSGKKRKKRGLKNVNT	498

FIG. 51

REPLACEMENT
SHEET

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ATGCAAGATACCGCTACCTGCAGTATTTGTCAGGGGACGGGATTCGTAAA	
GACCGAAGACAACAAGGTAAGGCTCTGCGAATGCAGGTTCAAGAAAAGGG	100
ATGTAAACAGGGAACTAAACATCCCAAAGAGGTACTGGAACGCCAACTTA	
GACACTTACCACCCCAAGAACGTATCCCAGAACAGGGCACTTTTGACGAT	200
AAGGGTCTTCGTCCACAACCTTCAATCCCGAGGAAGGGAAAGGGCTTACCT	
TTGTAGGATCTCCTGGAGTCGGCAAACTCACCTTGCGGTTGCAACATTA	300
AAAGCGATTTATGAGAAGAAGGGAATCAGAGGATACTTCTTCGATACGAA	
GGATCTAATATTCAGGTTAAAACACTTAATGGACGAGGGAAAGGATACAA	400
AGTTTTTTAAAACTGTCTTAAACTCACCGGTTTTGGTTCTCGACGACCTC	
GGTTCTGAGAGGCTCAGTGACTGGCAGAGGGAACTCATCTCTTACATAAT	500
CACTTACAGGTATAACAACCTTAAGAGCACGATAATAACCACGAATTACT	
CACTCCAGAGGGAAGAAGAGAGTAGCGTGAGGATAAGTGCGGATCTTGCA	600
AGCAGACTCGGAGAAAACGTAGTTTCAAAAATTTACGAGATGAACGAGTT	
GCTCGTTATAAAGGGTCCGACCTCAGGAAGTCTAAAAAGCTATCAACCC	700
CATCT	

FIG. 52

MQDTATCSICQGTGFVKTEDNKNVRLCECRFKKRDVNRELNIPKRYWNANL	
DTYHPKNVSQNRALLTIRVFVHNFNPEEGKGLTFVGSPGVGKTHLAVATL	100
KAIYEKKGIRGYFFDTKDLIFRLKHLMDGKDTKFLKTVLNSPVLVLDL	
GSERLSDWQRELISYIITYRYNNLSTIITTNYSLOREEESSVRISADLA	200
SRLGENVVSKIYEMNELLVIKGSDLRKSJKLSTPS	

FIG. 53

REPLACEMENT SHEET

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ATGAAAAAGATTGAAAATTTGAAGTGAAAAATGTCTCGTTTAAAAGCCT	
GGAAATAGATCCCGATGCAGGTGTGGTTCTCGTTTCCGTGGAAAAATTCT	100
CCGAAGAGATAGAAGACCTTGTGCGTTTACTGGAGAAGAAGACGCGGTTT	
CGAGTCATCGTGAACGGTGTTCAAAAAAGTAACGGGGATCTAAGGGGAAA	200
GATACTTTCCTTCTCAACGGTAATGTGCCTTACATAAAAGATGTTGTTT	
TCGAAGGAAACAGGCTGATTCTGAAAGTGCTTGGAGATTTTCGCGCGGGAC	300
AGGATCGCCTCCAAACTCAGAAGCACGAAAAACAGCTCGATGAACTGCT	
GCCTCCCGGAACAGAGATCATGCTGGAGGTTGTGGAGCCTCCGGAAGATC	400
TTTTGAAAAAGGAAGTACCACAACCAGAAAAGAGAGAAGAACCAGGGT	
GAAGAATTGAAGATCGAGGATGAAAACCACATCTTTGGACAGAAACCCAG	500
AAAGATCGTCTTCACCCCCCTCAAAAATCTTTGAGTACAACAAAAGACAT	
CGGTGAAGGGCAAGATCTTCAAAATAGAGAAGATCGAGGGGAAAAGAACG	600
GTCTTCTGATTTACCTGACAGACGGAGAAGATTCTCTGATCTGCAAAGT	
CTTCAACGACGTTGAAAAGGTGGAAGGGGAAAGTATCGGTGGGAGACGTGA	700
TCGTTGCCACAGGAGACCTCCTTCTCGAAAACGGGGAGCCCACCCTTTAC	
GTGAAGGGAATCACAAAACCTTCCCGAAGCGAAAAGGATGGACAAATCTCC	800
GGTTAAGAGGGTGGAGCTCCACGCCCATAACCAAGTTCAGCGATCAGGACG	
CAATAACAGATGTGAACGAATATGTGAAACGAGCCAAGGAATGGGGCTTT	900
CCCGCGATAGCCCTCACGGATCATGGGAACGTTTCAGGCCATACCTTACTT	
CTACGACGCGGCGAAAGAAGCTGGAATAAAGCCCATTTTCGGTATCGAAG	1000
CGTATCTGGTGAGTGACGTGGAGCCCGTCATAAGGAATCTCTCCGACGAT	
TCGACGTTTGGAGATGCCACGTTTCGTCTCGTCTCGACTTCGAGACGACGGG	1100
TCTCGACCCGACGGTGGATGAGATCATCGAGATAGGAGCGGTGAAGATAC	
AGGGTGGCCAGATAGTGGACGAGTACCACACTCTCATAAAGCCTTCCAGG	1200
GAGATCTCAAGAAAAAGTTTCGGAGATCACCGGAATCACTCAAGAGATGCT	
GGAAAACAAGAGAAGCATCGAGGAAGTTCTGCCGGAGTTCCTCGGTTTTC	1300
TGGAAGATTCCATCATCGTAGCACACAACGCCAACTTCGACTACAGATTT	
CTGAGGCTGTGGATCAAAAAAGTGATGGGATTGGACTGGGAAAGACCCTA	1400
CATAGATACGCTCGCCCTCGCAAAGTCCCTTCTCAAACCTGAGAAGCTACT	
CTCTGGATTCCGTTGTGGAAAAGCTCGGATTGGGTCCCTTCCGGCACCAC	1500
AGGGCCCTGGATGACGCGAGGGTCAACGCTCAGGTTTTCTCAGGTTTCGT	
TGAGATGATGAAGAAGATCGGTATCACGAAGCTTTCAGAAATGGAGAAGT	1600
TGAAGGATACGATAGACTACACCGCGTTGAAACCCTTCCACTGCACGATC	
CTCGTTCAGAACAAAAAGGGATTGAAAAACCTATACAAACCTGGTTTCTGA	1700
TTCTATATAAAGTACTTCTACGGTGTTCCGAGGATCCTCAAAAGTGAGC	
TCATCGAGAACAGAGAAGGACTGCTCGTGGGTAGCGCGTGTATCTCCGGT	1800
GAGCTCGGACGTGCCGCCCTCGAAGGAGCGAGTGATTCAGAACTCGAAGA	
GATCGCGAAGTTCTACGACTACATAGAAGTCATGCCGCTCGACGTTATAG	1900
CCGAAGATGAAGAAGACCTAGACAGAGAAAGACTGAAAGAAGTGTAACGA	
AACTCTACAGAATAGCGAAAAAATTGAACAAGTTCGTCTCATGACCGG	2000
TGATGTTTCAATTTCTCGATCCCGAAGATGCCAGGGGCAGAGCTGCACTTC	
TGGCACCTCAGGGAAACAGAACTTCGAGAATCAGCCCGCACTCTACCTC	2100
AGAACGACCGAAGAAATGCTCGAGAAGGCGATAGAGATATTGAAGATGA	
AGAGATCGCGAGGGGAAGTCGTGATAGAGAATCCCAACAGAATAGCCGATA	2200
TGATCGAGGAAGTGCAGCCGCTCGAGAAAAAATTCACCCGCCGATCATA	
GAGAACGCCGATGAAATAGTGAGAAACCTCACCATGAAGCGGGCGTACGA	2300
GATCTACGGTGATCCGCTTCCCGAAATCGTCCAGAAGCGTGTGAAAAAGG	

FIG. 54A

REPLACEMENT SHEET

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AACTGAACGCCATCATAAATCATGGATACGCCGTTCTCTATCTCATCGCT	2400
CAGGAGCTCGTTTCAGAAATCTATGAGCGATGGTTACGTGGTTGGATCCAG	
AGGATCCGTCGGGTCTTCACTCGTGCCAATCTCCTCGGAATAACAGAGG	2500
TGAATCCCCCTACCACCACATTACAGGTGTCCAGAGTGCAAATACTTTGAA	
GTTGTCGAAGACGACAGATACGGAGCGGGTTACGACCTTCCCAACAAGAA	2600
CTGTCCAAGATGTGGGGCTCCTCTCAGAAAAGACGGCCACGGCATAACCGT	
TTGAAACGTTTCATGGGGTTCGAGGGTGACAAGGTCCCCGACATAGATCTC	2700
AACTTCTCAGGAGAGTATCAGGAACGTGCTCATCGTTTTGTGGAAGAACT	
CTTCGGTAAAGACCACGTCTATAGGGCGGGAACCATAAACACCATCGCGG	2800
AAAGAAGTGCGGTGGGTACGTGAGAAGCTACGAAGAGAAAACCGGAAAG	
AAGCTCAGAAAGGCGGAAATGGAAAGACTCGTTTCCATGATCACGGGAGT	2900
GAAGAGAACGACGGGTCAGCACCCAGGGGGGCTCATGATCATAACCGAAAG	
ACAAAGAAGTCTACGATTTCACTCCCATACAGTATCCAGCCAACGATAGA	3000
AACGCAGGTGTGTTTACCACGCACTTCGCATACGAGACGATCCATGATGA	
CCTGGTGAAGATAGATGCGCTCGGCCACGATGATCCCACTTTCATCAAGA	3100
TGCTCAAGGACCTCACCGGAATCGATCCCATGACGATTTCCATGGATGAC	
CCCGATACGCTCGCCATATTCACTTCTGTGAAGCCTCTTGGTGTGGATCC	3200
CGTTGAGCTGGAAAGCGATGTGGGAACGTACGGAATTCCGGAGTTTCGGAA	
CCGAGTTTGTGAGGGGAATGCTCGTTGAAACGAGACCAAAGAGTTTCGCC	3300
GAGCTTGTGAGAATCTCAGGACTGTACACGGTACGGACGTCTGGTTGAA	
CAACGCACGTGATTGGATAAACCTCGGCTACGCCAAGCTCTCCGAGGTTA	3400
TCTCGTGTAGGGACGACATCATGAACTTCCTCATAACAAAGGAATGGAA	
CCGTCACTTGCCCTCAAGATCATGGAAAACGTCAGGAAGGGAAAGGGTAT	3500
CACAGAAGAGATGGAGAGCGAGATGAGAAGGCTGAAGGTTCAGAAATGGT	
TCATCGAATCCTGTAAAAGGATCAAATATCTCTTCCCGAAAGCTCACGCT	3600
GTGGCTTACGTGAGTATGGCCTTCAGAAATGCTTACTTCAAGGTTCACTA	
TCCTCTTCAGTTTTACGCGGCGTACTTCACGATAAAAGGTGATCAGTTCG	3700
ATCCGGTTCTCGTACTCAGGGGAAAAGAAGCCATAAAGAGGCGCTTGAGA	
GAACTCAAAGCGATGCCCTGCCAAAGACGCCCAAGAAAAACGAAGTGAG	3800
TGTTCTGGAGGTTGCCCTGGAAATGATACTGAGAGGTTTTTCTTCTCTAC	
CGCCCGACATCTTCAAATCCGACGCGAAGAAATTTCTGATAGAAGGAAAC	3900
TCGCTGAGAATTCCGTTCAACAACTTCCAGGACTGGGTGACAGCGTTGC	
CGAGTCGATAATCAGAGCCAGGGAAGAAAAGCCGTTCACTTCGGTGGAAG	4000
ATCTCATGAAGAGGACCAAGGTCAACAAAAATCACATAGAGCTGATGAAA	
AGCCTGGGTGTTCTCGGGGACCTTCCAGAGACGGAACAGTTACGCTTTT	4100

C

FIG. 54B

REPLACEMENT SHEET

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MKKIENLKWKNVSFKSLEIDPDAGVVLVSVEKFSEEIEDLVRLLLEKKTRF	
RVIVNGVQKSNGDLRGKILSLLNGNVPYIKDVVFEGNRLILKVLGDFARD	100
RIASKLRSTKKQLDELLPPGTEIMLEVVEPPEDLLKKEVPQPEKREEPKG	
EELKIEDENHIFGQKPRKIVFTPSKIFEYNKKTSVKGKIFKIEKIEGKRT	200
VLLIYLTGDGDSLICKVFNDVEKVEGKVSVDVIVATGDLLLLENGEPITY	
VKGITKLPEAKRMDKSPVKRVELHAHTKFSDQDAITDVNEYVKRAKEWGF	300
PAIALTDHGNVQAIPYFYDAAKEAGIKPIFGIEAYLVSDVEPVIRNLSDD	
STFGDATFVVLDFETTGLDPQVDEIIIEIGAVKIQQGQIVDEYHTLIKPSR	400
EISRKSSEITGITQEMLENKRSIEEVLPEFLGFLSDSIIVAHNANFDYRF	
LRLWIKKVMGLDWERPYIDTLALAKSLLKLRSYSLDSVVEKLGLGPFRHH	500
RALDDARVTAQVFLRFVEMMKIGITKLSEMEKLDKDTIDYTALKPFHCTI	
LVQNKKGKLNLYKLVSDSYIKYFYGVPRILKSELINREGLLVGSACISG	600
ELGRAALEGASDSELEEIAKFYDYIEVMPLDVIAEDEEDLDRERLKEVYR	
KLYRIAKKLNKFVVMTGVDVHFLDPEDARGRAALLAPQGNRNFNENQPALYL	700
RTTEEMLEKAIEIFEDEEIAREVVIENPNRIADMIEEVQPLEKKLHPPII	
ENADEIVRNLTMKRAYEIIYGDPLPEIVQKRVEKELNAIINHGYAVLYLIA	800
QELVQKSMDSGYVVGSRGSSVLNLLGITEVNPPLPHYRCPECKYFE	
VVEDDRYGAGYDLPNKNCPRCGAPLRKDGHGIPFETFMGFEGDKVPDIDL	900
NFSGEYQERHRFVEELFGKDHVYRAGTINTIAERSAVGYVRSYEEKTKG	
KLRKAEMERLVSMITGVKRTTGQHPGGLMIIPKDKEVYDFTPIQYPANDR	1000
NAGVFTTHFAYETIHDDLVKIDALGHDDPTFIKMLKDLTGIDPMTIPMDD	
PDTLAI FSSVKPLGVDPELESDVGTYGIPFEGTEFVRGMLVETRPKSFA	1100
ELVRISGLSHGTDVWLN NARDWINLGYAKLSEVISCRDDIMNFLIHKGME	
PSLAFKIMENVRKKGKITEEMESEMRRLKVPEWFIESCRIKYLFPKAHA	1200
VAYVSMAFRIAYFKVHYPLQFYAAYFTTIKGDQFDPVLVLRGKEATKRRLR	
ELKAMPAKDAQKKNEVSVLEVALEMILRGFSFLPPDIFKSDAKKFLIEGN	1300
SLRIPFNKLPGLGDSVAESIIRAREEKPFTSVEDLMKRTKVKNKHIELMK	
SLGVLGDLPETEQFTLF	1367

FIG. 55

REPLACEMENT
SHEET

64/83

GTGCTCGCCATGATATGGAACGACACCGTTTTTTGCGTCGTAGACACAGA	
AACCACGGGAACCGATCCCTTTGCCGGAGACCGGATAGTTGAAATAGCCG	100
CTGTTCCCTGTCTTCAAGGGGAAGATCTACAGAAACAAAGCGTTTCACTCT	
CTCGTGAATCCCAGAATAAGAATCCCTGCGCTGATTCAGAAAGTTCACGG	200
TATCAGCAACATGGACATCGTGGAAGCGCCAGACATGGACACAGTTTACG	
ATCTTTTCAGGGATTACGTGAAGGGAACGGTGCTCGTGTTTCACAACGCC	300
AACTTCGACCTCACTTTTCTGGATATGATGGCAAAGGAAACGGGAACTT	
TCCAATAACGAATCCCTACATCGACACACTCGATCTTTCAGAAGAGATCT	400
TTGGAAGGCCTCATTCTCTCAAATGGCTCTCCGAAAGACTTGGAATAAAA	
ACCACGATACGGCACCGTGCTCTTCCAGATGCCCTGGTGACCGCAAGAGT	500
TTTTGTGAAGCTTGTTGAATTTCTTGGTGAAAACAGGGTCAACGAATTCA	
TACGTGGAACCGGGG	567

FIG. 56

MLAMIWNDTVFCVVDTETTGTDPFAGDRIVEIAAVPVFKGKIYRNKAFHS	
LVNPRIRIPALIQKVHGISNMDIVEAPMDTVYDLFRDYVKGTVLVFHNA	100
NFDLTFLDMMAKETGNFPITNPYIDTLDLSEEIFGRPHSLKWLSERLGIK	
TTIRHRALPDALVTARVFKLVFLGENRVNEFIRGKRG	189

FIG. 57

REPLACEMENT SHEET

65/83

GTGGAAGTTCTTTACAGGAAGTACAGGCCAAAGACTTTTTCTGAGGTTGT	
CAATCAGGATCATGTGAAGAAGGCAATAATCGGTGCTATTCAGAAGAACA	100
GCGTGGCCCACGGATACATATTCGCCGGTCCGAGGGGAACGGGGAAGACT	
ACTCTTGCCAGAATTCTCGCAAAATCCCTGAACTGTGAGAACAGAAAGGG	200
AGTTGAACCCTGCAATTCCTGCAGAGCCTGCAGAGAGATAGACGAGGGAA	
CCTTCATGGACGTGATAGAGCTCGACGCGGCCTCCAACAGAGGAATAGAC	300
GAGATCAGAAGAATCAGAGACGCCGTTGGATACAGGCCGATGGAAGGTAA	
ATACAAAGTCTACATAATAGACGAAGTTCACATGCTCACGAAAGAAGCCT	400
TCAACGCGCTCCTCAAAACACTCGAAGAACCCTCCTTCCCACGTCGTGTTT	
GTGCTGGCAACGACAAACCTTGAGAAGGTTCTCCACGATTATCTCGAG	500
ATGTCAGGTTTTTCGAGTTCAGAAACATTCCCGACGAGCTCATCGAAAAGA	
GGCTCCAGGAAGTTGCGGAGGCTGAAGGAATAGAGATAGACAGGGGAAGCT	600
CTGAGCTTCATCGCAAAAAGAGCCTCTGGAGGCTTGAGAGACGCGCTCAC	
CATGCTCGAGCAGGTGTGGAAGTTCTCGGAAGGAAAGATAGATCTCGAGA	700
CGGTACACAGGGCGCTCGGGTTGATACCGATACAGGTTGTTTCGCGATTAC	
GTGAACGCTATCTTTTCTGGTGATGTGAAAAGGGTCTTCACCGTTCTCGA	800
CGACGTCTATTACAGCGGGAAGGACTACGAGGTGCTCATTCAGGAAGCAG	
TCGAGGATCTGGTCTGAAGACCTGGAAGGGGAGAGAGGGGTTTACCAGGTT	900
TCAGCGAACGATATAGTTCAGGTTTCGAGACAACTTCTGAATCTTCTGAG	
AGAGATAAAGTTCGCCGAAGAAAAACGACTCGTCTGTAAAGTGGGTTCCG	1000
CTTACATAGCGACGAGGTTCTCCACCACAAACGTTTCAGGAAAACGATGTC	
AGAGAAAAAACGATAATTCAAATGTACAGCAGAAAGAAGAGAAGAAAGA	1100
AACGGTGAAGGCAAAAGAAGAAAAACAGGAAGACAGCGAGTTCGAGAAAC	
GCTTCAAAGAACTCATGGAAGAACTGAAAGAAAAGGGCGATCTCTCTATC	1200
TTTGTCGCTCTCAGCCTCTCAGAGGTGCAGTTTGACGGAGAAAAGGTGAT	
TATTTCTTTTGATTTCATCGAAAGCTATGCATTACGAGTTGATGAAGAAA	1300
AACTGCCTGAGCTGGAAAACATTTTTTCTAGAAAACTCGGGAAAAAAGTA	
GAAGTTGAACTTCGACTGATGGGAAAAGAAGAAACAATCGAGAAGGTTTC	1400
TCAGAAGATCCTGAGATTGTTTGAACAGGAGGGA	

FIG. 58

MEVLYRKYPKTFSEVVNQDHVKKAIIGAIQKNSVAHGYIFAGPRGTGKT	
TLARILAKSLNCENRKGVEPCNSCRACREIDEGTFMDVIELDAASNRGID	100
EIRRIRDAVGYPMEGKYKVYIIDEVHMLTKEAFNALLKTLEPPSHVVF	
VLATTNLEKVPPTIISRCQVFEFRNIPDELIEKRLQEVAAEGIEIDREA	200
LSFIAKRASGGLRDALTMLEQVWKFSEGTKIDLETVHRALGLIPIQVVRDY	
VNAIFSGDVKRVTFLDDVYYSKDYEVLIQEAVEDLVEDLERERGVYQV	300
SANDIVQVSRQLLNLLREIKFAEEKRLVCKVGSAYIATRFSTTNVQENDV	
REKNDNSNVQKKEEKETVKAKEEKQEDSEFEKRFKELMEELKEKGDL SI	400
FVALSLSEVQFDGEKVIIISFDSSKAMHYELMKKKLPELENIFSRKLGKKV	
EVELRLMGKEETIEKVSQKILRLFEEQEG	478

FIG. 59

REPLACEMENT SHEET

66/83

ATGAAAGTAACCGTCACGACTCTTGAATTGAAAGACAAAATAACCATCGC	
CTCAAAGCGCTCGCAAAGAAATCCGTGAAACCCATTCTTGCTGGATTTCT	100
TTTTCGAAGTGAAAGATGGAAATTTCTACATCTGCGCGACCGATCTCGAG	
ACCGGAGTCAAAGCAACCGTGAATGCCGCTGAAATCTCCGGTGAGGCACG	200
TTTTGTGGTACCAGGAGATGTCATTTCAGAAGATGGTCAAGGTTCTCCCAG	
ATGAGATAACGGAACCTTTCTTTAGAGGGGGATGCTCTTGTTATAAGTTCT	300
GGAAGCACCGTTTTTCAGGATCACCACCATGCCCGCGGACGAATTTCCAGA	
GATAACGCCTGCCGAGTCTGGAATAACCTTCGAAGTTGACACTTCGCTCC	400
TCGAGGAAATGGTTGAAAAGGTCATCTTCGCCGCTGCCAAAGACGAGTTC	
ATGCGAAATCTGAATGGAGTTTTCTGGGAACTCCACAAGAATCTTCTCAG	500
GCTGGTTGCAAGTGATGGTTTCAGACTTGCACTTGCTGAAGAGCAGATAG	
AAAACGAGGAAGAGGCGAGTTTTCTTGCTCTCTTTGAAGAGCATGAAAGAA	600
GTTCAAAACGTGCTGGACAACACAACGGAGCCGACTATAACGGTGAGGTA	
CGATGGAAGAAGGGTTTCTCTGTCGACAAATGATGTAGAAACGGTGATGA	700
GAGTGGTCGACGCTGAATTTCCCGATTACAAAAGGGTGATCCCCGAACT	
TTCAAAACGAAAGTGTTGGTTTCCAGAAAAGAACTCAGGGAATCTTTGAA	800
GAGGGTGATGGTGATTGCCAGCAAGGGAAGCGAGTCCGTGAAGTTCGAAA	
TAGAAGAAAACGTTATGAGACTTGTGAGCAAGAGCCCGGATTATGGAGAA	900
GTGGTTCGATGAAGTTGAAGTTCAAAAAGAAGGGGAAGATCTCGTGATCGC	
TTTCAACCCGAAGTTCATCGAGGACGTTTTGAAGCACATTGAGACTGAAG	1000
AAATCGAAATGAACTTCGTTGATTCTACCAGTCCATGTCAGATAAATCCA	
CTCGATATTTCTGGATACCTTTACATAGTGATGCCCATCAGACTGGCA	1098

FIG. 60

MKVTVTTLLELKDKITIASKALAKKSVKPILAGFLFEVKDGNFYICATDLE	
TGVKATVNAAEISGEARFVVPGDVIQKMKVLPDEITELSLEGDALVISS	100
GSTVFRITTMPADEFPETPAESGITFEVDTSLLEEMVEKVIFAAKDEF	
MRNLNGVFWELHKNLLRLVASDGFRLALAEQIENEEASFLLSLKSMKE	200
VQNVLDNTTEPTITVRYDGRRVSLSTNDVETVMRVVDAEFPDYKRVIPET	
FKTKVVSRKELRESLKRVMVIAASKGSESVKFEIEENVMLVSKSPDYGE	300
VVDEVEVQKEGEDLVIAFNPKFIEDVLKHIETEEIEMNFVDSTSPCQINP	
LDISGYLYIVMPIRLA	366

FIG. 61

REPLACEMENT SHEET

67/83

ATGCCAGTCACGTTTCTCACAGGTACTGCAGAACTCAGAAGGAAGAATT	
GATAAAGAACTCCTGAAGGATGGTAACGTGGAGTACATAAGGATCCATC	100
CGGAGGATCCCGACAAGATCGATTTTCATAAGGTCTTTACTCAGGACAAAG	
ACGATCTTTTCCAACAAGACGATCATTGACATCGTCAATTTTCGATGAGTG	200
GAAAGCACAGGAGCAGAAGCGTCTCGTTGAACTTTTGAAAAACGTACCGG	
AAGACGTTTCATATCTTCATCCGTTCTCAAAAAACAGGTGGAAAGGGAGTA	300
GCGCTGGAGCTTCCGAAGCCATGGGAAACGGACAAGTGGCTTGAGTGGAT	
AGAAAAGCGCTTCAGGGAGAAATGGTTTGCTCATCGATAAAGATGCCCTTC	400
AGCTGTTTTTCTCCAAGGTTGGAACGAACGACCTGATCATAGAAAGGGAG	
ATTGAAAACTGAAAGCTTATTCGGAGGACAGAAAGATAACGGTAGAAGA	500
CGTGGAAGAGGTCGTTTTTACCTATCAGACTCCGGGATACGATGATTTTT	
GCTTTGCTGTTTCCGAAGGAAAAAGGAAGCTCGCTCACTCTCTTCTGTCTG	600
CAGCTGTGGAAAACCACAGAGTCCGTGGTGATTGCCACTGTCCTTGCGAA	
TCACTTCTTGGATCTCTTCAAAATCCTCGTTCTTGTGACAAAGAAAAGAT	700
ACTACACCTGGCCTGATGTGTCCAGGGTGTCCAAAGAGCTGGGAATTCCC	
GTTCCCTCGTGTGGCTCGTTTTCTCGGTTTCTCCTTTAAGACCTGGAAATT	800
CAAGGTGATGAACCACCTCCTCTACTACGATGTGAAGAAGGTTAGAAAGA	
TACTGAGGGATCTCTACGATCTGGACAGAGCCGTGAAAAGCGAAGAAGAT	900
CCAAAACCGTTCTTCCACGAGTTCATAGAAGAGGTGGCACTGGATGTATA	
TTCTCTTCAGAGAGATGAAGAA	972

FIG. 62

MPVTFLTGTAEQKEELIKKLLKDG NVEYIRIHPEDPKIDFIRSLLR TK	
TIFS NKTIIDIVNFDEWKAQE QKRLVELLKNVPEDVHIFIRSQKTGGKGV	100
ALELPKPWETDKWLEWIEKRFR ENGLLIDKDALQLFFSKVGTNDLI IERE	
IEKLKAYSEDRKITVEDVEEVVFTYQTPGYDDFCFAVSEGKRKL AHSLLS	200
QLWKTTESVVIATVLANHFLDLFKILVLVTKRYYTWPDVSRVSKELGIP	
VPRVARFLGFSFKTWKFKVMNHL LYYDVKKVRKILRDLYDL DRAVKSEED	300
PKPFFHEFIEEVALDVYSLQRDEE	

FIG. 63

REPLACEMENT SHEET

68/83

ATGAACGATTTGATCAGAAAGTACGCTAAAGATCAACTGGAACTTTGAA	
AAGGATCATAGAAAAGTCTGAAGGAATATCCATCCTCATAAATGGAGAAG	100
ATCTCTCGTATCCGAGAGAAGTATCCCTTGAACCTCCCGAGTACGTGGAG	
AAATTTCCCCCGAAGGCCTCGGATGTTCTGGAGATAGATCCCGAGGGGGA	200
GAACATAGGCATAGACGACATCAGAACGATAAAGGACTTCCTGAACTACA	
GCCCCGAGCTCTACACGAGAAAGTACGTGATAGTCCACGACTGTGAAAGA	300
ATGACCCAGCAGGCGGCGAACGCGTTTCTGAAGGCCCTTGAAGAACCACC	
AGAATACGCTGTGATCGTTCTGAACACTCGCCGCTGGCATTATCTACTGC	400
CGACGATAAAGAGCCGAGTGTTTCAGAGTGGTTGTGAACGTTCCAAAGGAG	
TTCAGAGATCTCGTGAAAGAGAAAATAGGAGATCTCTGGGAGGAACTTCC	500
ACTTCTTGAGAGAGACTTCAAACGGCTCTCGAAGCCTACAACTTGGTG	
CGGAAAAACTTTCTGGATTGATGGAAAGTCTCAAAGTTTGGAGACGGAA	600
AAACTCTTGAAAAAGGTCCTTTCAAAGGCCTCGAAGGTTATCTCGCATG	
TAGGGAGCTCCTGGAGAGATTTTCAAAGGTGGAATCGAAGGAATTCTTTG	700
CGCTTTTTTGATCAGGTGACTAACACGATAACAGGAAAAGACGCGTTTCTT	
TTGATCCAGAGACTGACAAGAATCATTCTCCACGAAAACACATGGGAAAG	800
CGTTGAAGATCAAAAAAGCGTGTCTTTCTCGATTCAATTCTCAGGGTGA	
AGATAGCGAATCTGAACAACAACTCACTCTGATGAACATCCTCGCGATA	900
CACAGAGAGAGAAAGAGAGGTGTCAACGCTTGGAGC	

FIG. 64

MNDLIRKYAKDQLETLKRIIEKSEGISILINGEDLSYPREVSLELPEYVE	
KFPPKASDVLEIDPEGENIGIDDIRTIKDFLNYSPELYTRKYVIVHDCER	100
MTQQAANAFLKALEEPPEYAVIVLNTRRWYLLPTIKSRVFRVVVNPKE	
FRDLVKEKIGDLWEELPLLERDFKTALEYKLGAEKLSGLMESLKVLETE	200
KLLKKVLSKGLEGYLACRELLERFSKVESKEFFALFDQVTNTITGKDAFL	
LIQRLTRIILHENTWESVEDKSVSFLDSILRVKIANLNNKLTLMNILAIH	300
RERKRGVNAWS	

FIG. 65

REPLACEMENT
SHEET

69/83

ATGTCTTTCTTCAACAAGATCATACTCATAGGAAGACTCGTGAGAGATCC
CGAAGAGAGATACACGCTCAGCGGAACTCCAGTCACCACCTTCACCATAG 100
CGGTGGACAGGGTCCCAGAAAGAACGCGCCGGACGACGCTCAAACGACT
GATTTCTTCAGGATCGTCACCTTTGGAAGACTGGCAGAGTTCGCTAGAAC 200
CTATCTCACCAAAGGAAGGCTCGTTCTCGTCGAAGGTGAAATGAGAATGA
GAAGATGGGAAACACCCACTGGAGAAAAGAGGGTATCTCCGGAGGTTGTC 300
GCAAACGTTGTTAGATTTCATGGACAGAAAACCTGCTGAAACAGTTAGCGA
GACTGAAGAGGAGCTGGAAATACCGGAAGAAGACTTTTCCAGCGATACCT 400
TCAGTGAAGATGAACCACCATT

FIG. 66

MSFFNKIILIGRLVRDPEERYTLSGTPVTTFTIAVDRVPRKNAPDDAQT
DFFRIVTFGRLAEFARTYLTGRLVLVEGEMRMRRWETPTGEKRVSPVV 100
ANVVRFMDRKPAETVSETEEELEIPEEDFSSDTFSEDEPPF

FIG. 67

REPLACEMENT SHEET

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ATGCGTGTTC	CCCCGCACA	ACTTAGAGG	CCGAAGTTG	CTGTGCTCG	GAAAG	
CATATTGATAG	ATCCGTCGG	TAAATAAAC	GACGTTCTT	GAAATTTTG	AGCC	100
ACGAAGATTTT	CTATCTGAA	AAAAACAC	CAACATCTT	CAGAGCGAT	GGA	
GAGCTTTACG	ACGAAGGAA	AACCGGTG	GACGTGGTT	TCCGTCTGT	GACAA	200
GCTTCAAAGC	ATGGGAAAC	TGAGGAAG	TAGGTGGAG	ATCTGGAAG	TGG	
CCCAGCTCG	CTGAGGCTG	TGCCCAGT	TCTGCACAC	GCACTTCACT	ACGCG	300
GAGATCGTCA	AGGAAAAAT	CCATTCTG	AGGAAACTC	ATTGAGATC	TCCAG	
AAAAATCTC	AGAAAGTGC	CTACATG	GGAAGAAG	ATGTGGAG	ATCCTG	400
ACAACGCAG	AAAAGATG	ATCTTCG	GAGATCTC	AGAGATGAA	AACGACAAA	
TCCTACGAT	CATCTGAG	AGGCATC	ATGCACCG	GGTGTGTTG	AAAACCTG	500
GA	ACTTCAGG	GAAAGAG	CCAACCTT	ATAGAAC	CCCGGTGTG	CTCATAACG
GACTACCA	ACGGGATT	CAAAAGT	CTGGACAA	ACAGACC	ACAGGGT	TCCAC
AGCTCCG	ATCTGGT	GATAATAG	CAGCGAG	ACCCTCC	ATGGGAAA	AACCTC
CTTCGCA	CTCTCAAT	AGCGAG	GAACATG	GCTGTCA	ATTTCGAA	ATCCCCG
TCGGAAT	ATTCAGT	CTCGAG	ATGTCCA	AGGAAC	AGCTCGCT	CAAAGACTA
CTCAGCAT	TGGAGTCC	GGTGTGG	ATCTTTA	CAGCATC	AGAACAGG	ATACCT
GGATCAGG	GAGAAGT	GGGAAAG	ACTCACA	ATAGCGG	CTTCTAA	ACTCTACA
AAGCACCC	CATAGTTG	TGGACG	ATGAGTC	ACTCCTC	GATCCGCG	ATCGTTG
AGGGCAA	AAGCGAG	AAGGATG	AAAAAAG	AATACG	ATGTAAA	AGCCATTTT
TGTCGAC	TATCTCC	AGCTCAT	GCACCTG	AAAGGA	AGAAAAG	AAAGCAGAC
AGCAGG	AGATATC	CGAGATC	TCGAGAT	CTCTGA	AGCTCCT	TGCGAGGGAA
CTCGAC	ATAGTGG	TGATAG	CGCTTTC	CAGCTTTC	GAGGGCCG	TAGAACA
GAGAGA	AGACAAA	AGACCG	AGGCTG	AGTGA	CCTCAGG	GAATCCG
GTTGCG	A					
TAGAAC	AGGACGC	AGACAC	AGTCAT	CTTTCAT	CTACAGG	GAGGAATAT
TAC						
AGGAGC	AAAAAAT	C	CAAAGAG	GAAAGCA	AGCTTCA	CGAACCTC
ACGAAGC						
TGAAAT	CATAAT	AGGTAA	ACAGAG	AAACGGT	CCCGTTG	GGAACGATC
ACTC						
TGATCT	TCGACCC	CAGAAC	G	GTTACGT	TCCATGA	AGTCGATGT
G						
TGCAT						
						1353

FIG. 68

MRVPPHNLE	AEVAVLGS	SILIDPSV	INDVLEIL	SHEDFYLK	KKHQHIF	FRAME	
ELYDEGK	PVDVVS	CDKLQSM	GKLEEV	GGDLEVA	QLAEAVP	SSAHALHYA	100
EIVKEKS	SILRKL	IEISRK	ISESAY	MEEDVEI	LLDNAEK	MIFEISEM	KTTK
SYDHLR	GIMHRV	FENLEN	FRERAN	LIEPGV	LITGLPT	GFKSLDK	QTTGFH
SSDLV	IIAAR	PSMGKTS	FSALSI	ARNMAV	NFEIPV	GIFSLEMS	KEQLAQR
LSMESG	VDLYS	IRTGYLD	QEKWER	L	IAASKLY	KAPIVV	DDDESLLD
PRSL							300
RAKARR	MKEYD	VKAIFV	DYLLQ	MLHLK	GRKESR	QQEISEI	SRSLKLL
ARE							
LDIVV	IALSQL	SRAVEQ	REDKR	PRLSDL	RESGAIE	QDADTV	IFIFYREE
YY							400
RSKKS	KEESKL	HEPHEA	EIIIGK	QRNGP	VGTITL	IFDPRT	VTVFHEV
DVVH							
S							451

FIG. 69

REPLACEMENT SHEET

71/83

GTGATTCCTCGAGAGGTCATCGAGGAAATAAAAGAAAAGGTTGACATCGT	
AGAGGTCATTTCCGAGTACGTGAATCTTACCCGGGTAGGTTCCCTCCTACA	100
GGGCTCTCTGTCCCTTTCATTTCAGAAACCAATCCTTCTTTCTACGTTTCAT	
CCGGGTTTGAAGATAACCATTGTTTCGGCTGCGGTGCGAGTGGAGACGT	200
CATCAAATTTCTTCAAGAAATGGAAGGGATCAGTTTCCAGGAAGCGCTGG	
AAAGACTTGCCAAAAGAGCTGGGATTGATCTTTCTCTCTACAGAACAGAA	300
GGGACTTCTGAATACGGAAAATACATTCTGTTTGTACGAAGAAACGTGGAA	
AAGGTACGTCAAAGAGCTGGAGAAAATCGAAAGAGGCCAAAAGACTATTTAA	400
AAAGCAGAGGGCTTCTCTGAAGAAGATATAGCAAAGTTCGGCTTTGGGTAC	
GTCCCCAAGAGATCCAGCATCTCTATAGAAGTTGCAGAAGGCATGAACAT	500
AACACTGGAAGAAGTGTGTCAGATACGGTATCGCGCTGAAAAAGGGTGATC	
GATTCGTTGATAGATTCTGAAGGAAGAATCGTTGTTCCAATAAAGAACGAC	600
AGTGGTCATATTGTGGCTTTTGGTGGGCGTGCTCTCGGCAACGAAGAACC	
GAAGTATTTGAACTCTCCAGAGACCAGGTATTTTTCGAAGAAGAAGACCC	700
TTTTTCTCTTCGATGAGGCGAAAAAGTGCCAAAAGAGGTTGGTTTTTTC	
GTCATCACCGAAGGCTACTTCGACGCGCTCGCATTCAGAAAGGATGGAAT	800
ACCAACGGCGGTGCTGTTCTTGGGGCGAGTCTTTCAGAGAGGGCGATTCT	
TAAAACTTTCGGCGTATTCGAAAAACGTCATACTGTGTTTCGATAATGAC	900
AAAGCAGGCTTCAGAGCCACTCTCAAATCCCTCGAGGATCTCCTAGACTA	
CGAATTCAACGTGCTTGTGGCAACCCCTCTCCTTACAAAGACCCAGATG	1000
AACTCTTTCAGAAAGAAGGAGAAGGTTTCATTGAAAAAGATGCTGAAAAAC	
TCGCGTTCGTTTCGAATATTTTCTGGTGACGGCTGGTGAGGTCTTCTTTGA	1100
CAGGAACAGCCCCGCGGTGTGAGATCCTACCTTTCTTTCTCCTCAAAGGTT	
GGGTCCAAAAGATGAGAAGGAAAGGATATTTGAAACACATAGAAAATCTC	1200
GTGAATGAGGTTTCATCTTCTCTCCAGATACCAGAAAACCAAGATTTTGAA	
CTTTTTTTGAAAGCGACAGGTCTAACACTATGCCTGTTTCATGAGACCAAGT	1300
CGTCAAAGGTTTACGATGAGGGGAGAGGACTGGCTTATTTGTTTTTTGAAC	
TACGAGGATTTGAGGGAAAAGATTCTGGAAGTGGACTTAGAGGTACTGGA	1400
AGATAAAAACGCGAGGGAGTTTTTCAAGAGAGTCTCACTGGGAGAAGATT	
TGAACAAAGTCATAGAAAACCTCCCAAAGAGCTGAAAGACTGGATTTTTT	1500
GAGACAATAGAAAGCATTCCTCCTCCAAAGGATCCCGAGAAATTCCTCGG	
TGACCTCTCCGAAAAGTTGAAAATCCGACGGATAGAGAGACGTATCGCAG	1600
AAATAGATGATATGATAAAGAAAGCTTCAAACGATGAAGAAAGGCGTCTT	
CTTCTCTCTATGAAAGTGATCTCCTCAGAAAAATAAAGAGGAGG	1695

FIG. 70

REPLACEMENT SHEET

72/83

MIPREVIEEIKEKVDIVEVISEYVNLTRVGSSYRALCPFHSETNPSFYVH	
PGLKIYHCFGCGASGDVIKFLQEMEGISFQEALERLAKRAGIDLSLYRTE	100
GTSEYGKYIRLYEETWKRYVKELEKSKEAKDYLSRGFSEEDIAKFGFGY	
VPKRSSISIEVAEGMNITLEELVRYGIALKKGDRFVDRFEGRIVVPIKND	200
SGHIVAFGGRALGNEEPKYLNSPETRYFSKKKTLFLFDEAKKVAKEVGFF	
VITEGYFDALAFRKDGIPTAVAVLGASLSREAILKLSAYSKNVILCFDND	300
KAGFRATLKSLEDLLDYEFNVLVATPSPYKDPDELFOKEGEGSLKKMLKN	
SRSFEYFLVTAGEVFFDRNSPAGVRSYLSFLKGWVQKMRRKGYLKHIENL	400
VNEVSSSLQIPENQILNFFESDRSNTMPVHETKSSKVYDEGRGLAYLFLN	
YEDLREKILELDLEVLEDKNAREFFKRVSLGEDLNKVIENFPKELKDWIF	500
ETIESIPPPKDPEKFLGDLSEKLKIRRIERIAEIDDMIKKASNDEERRL	
LLSMKVDLLRKIKRR	565

FIG. 71

ATGGCTCTACACCCGGCTCACCTGGGGCAATAATCGGGCACGAGGCCGT	
TCTCGCCCTCCTTCCCCGCTCACCGCCCAGACCCTGCTCTTCTCCGGCC	100
CCGAGGGGGTGGGGCGGCGCACCGTGGCCCGCTGGTACGCCTGGGGGCTC	
AACCGCGGCTTCCCCCGCCCTCCCTGGGGGAGCACCCGGACGTCCTCGA	200
GGTGGGGCCCAAGGCCCGGGACCTCCGGGGCCGGGCGGAGGTGCGGCTGG	
AGGAGGTGGCGCCCCCTCTTGAGTGCTGCCAGCCACCCCGGGAGCGG	300
GTGAAGGTGGCCATCCTGGACTCGGCCACCTCCTCACCGAGGCCGCCGC	
CAACGCCCTCCTCAAGCTCCTGGAGGAGCCCCCTTCTACGCCCGCATCG	400
TCCTCATCGCCCCAAGCCGCGCCACCCTCCTCCCCACCCTGGCCTCCCGG	
GCCACGGAGGTGGCATTCGCCCCCGTGCCCGAGGAGGCCCTGCGCGCCCT	500
CACCCAGGACCCGGAGCTCCTCCGCTACGCCGCGGGGCCCCGGGCGCC	
TCCTTAGGGCCCTCCAGGACCCGGAGGGGTACCGGGCCCGCATGGCCAGG	600
GCGCAAAGGGTCTTGAAAGCCCCGCCCTGGAGCGCCTCGCTTTGCTTCG	
GGAGCTTTTGCCGAGGAGGAGGGGGTCCACGCCCTCCACGCCGTCCTAA	700
AGCGCCCGGAGCACCTCCTTGCCCTGGAGCGGGCGGGAGGCCCTGGAG	
GGGTACGTGAGCCCCGAGCTGGTCCTCGCCCGGCTGGCCTTAGACTTAGA	800
GACA	

FIG. 72

MALHPAHPGAIIGHEAVLALLPRLTAQTLLFSGPEGVGRRTVARWYAWGL	
NRGFPPPSLGEHPDVLEVGPKARDLRGRAEVRLEEVAPLLEWCSSHPRER	100
VKVAILDSAHLLTEAAANALLKLEEPSYARIVLIAPSRATLLPTLASR	
ATEVAFAPVPEEALRALTDPELLRYAAGAPGRLLRALQDPEGYRARMAR	200
AQRVLKAPPLERLALLRELLAEEEGVHALHAVLKRPEHLLALERAREALE	
GYVSPELVLARLALDLET	268

FIG. 73

REPLACEMENT SHEET

73/83

ATGCTGGACCTGAGGGAGGTGGGGGAGGCGGAGTGGAAGGCCCTAAAGCC	
CCTTTTGGAAAGCGTGCCCGAGGGCGTCCCCGTCCTCCTCCTGGACCCTA	100
AGCCAAGCCCCCTCCCGGGCGGCCTTCTACCGGAACCGGGAAAGCGGGAC	
TTCCCCACCCCCAAGGGGAAGGACCTGGTGCGGCACCTGGAAAACCGGGC	200
CAAGCGCCTGGGGCTCAGGCTCCCGGGCGGGGTGGCCCAGTACCTGGCCT	
CCCTGGAGGGGGACCTCGAGGCCCTGGAGCGGGAGCTGGAGAAGCTTGCC	300
CTCCTCTCCCCACCCCTCACCCCTGGAGAAGGTGGAGAAGGTGGTGGCCCT	
GAGGCCCCCCTCACGGGCTTTGACCTGGTGCGCTCCGTCCTGGAGAAGG	400
ACCCAAGGAGGCCCTCCTGCGCCTAGGCGGCCTCAAGGAGGAGGGGGAG	
GAGCCCCCTCAGGCTCCTCGGGGCCCTCTCCTGGCAGTTCGCCCTCCTCGC	500
CCGGGCCTTCTTCCTCCTCCGGGAAAACCCCAGGCCCAAGGAGGAGGACC	
TCGCCCCGCTCGAGGCCACCCCTACGCCGCCCGCCGCGCCCTGGAGGCG	600
GCGAAGCGCCTCACGGAAGAGGCCCTCAAGGAGGCCCTGGACGCCCTCAT	
GGAGGCGGAAAAGAGGGCCAAGGGGGGGAAGACCCGTGGCTCGCCCTGG	700
AGGCGGCGGTCTCCGCCTCGCCCGTTGA	

FIG. 74

MVIAFTGDPFLAREALLEEARLRGLSRFTEPTPEALAQALAPGLFGGGGA	
MLDLREVGEAEWKALKPLLESVPEGVPVLLDPKPSPSRAAFYRNRERRD	100
FPTPKGKDLVRHLENRAKRLGLRPLPGGVAQYLASLEGDLEALERELEKLA	
LLSPPLTLEKVEKVVALRPPLTGFDLVRVLEKDPKEALLRLGGLKEEGE	200
EPLRLLGALSWQFALLARAFFLLRENPRPKEEDLARLEAHPYAARRALEA	
AKRLTEEALKEALDALMEAEKRAKGKDPWLALEAAVLRRLAR	292

FIG. 75

REPLACEMENT SHEET

74/83

ATGGCTCGAGGCCTGAACCGCGTTTTTCCTCATCGGCGCCCTCGCCACCCG	
GCCGGACATGCGCTACACCCCGGCGGGGCTCGCCATTTTGACCTGACCC	100
TCGCCGGTCAGGACCTGCTTCTTTCCGATAACGGGGGGGAACCGGAGGTG	
TCCTGGTACCACCGGGTGAGGCTCTTAGGCCGCCAGGCGGAGATGTGGGG	200
CGACCTCTTGACCAAGGGCAGCTCGTCTTCGTGGAGGGCCGCCTGGAGT	
ACCGCCAGTGGGAAAGGGAGGGGGAGAAGCGGAGCGAGCTCCAGATCCGG	300
GCCGACTTCCGGACCCCCTGGACGACCGGGGGGAAGAAGCGGGCGGAGGAC	
AGCCGGGGCCAGCCCAGGCTCCGCGCCGCCCTGAACCAGGTCTTCCTCAT	400
GGGCAACCTGACCCGGGACCCGGAACCTCCGCTACACCCCCCAGGGCACCG	
CGGTGGCCCCGGCTGGGCCTGGCGGTGAACGAGCGCCGCCAGGGGGCGGAG	500
GAGCGCACCCACTTCGTGGAGGTTCAAGGCCTGGCGCGACCTGGCGGAGTG	
GGCCGCCGAGCTGAGGAAGGGCGACGGCCTTTTCGTGATCGGCAGGTTGG	600
TGAACGACTCCTGGACCAGCTCCAGCGGCGAGCGGCGCTTCCAGACCCGT	
GTGGAGGCCCTCAGGCTGGAGCGCCCCACCCGTGGACCTGCCCAGGCCTG	700
CCCAGGCCGGCGGAACAGGTCCCGCGAAGTCCAGACGGGTGGGGTGGACA	
TTGACGAAGGCTTGGAAGACTTTCCGCCGGAGGAGGATTTGCCGTTTTGA	800
GCACGAA	

FIG. 76

MARGLNRVFLIGALATRPDMRYTPAGLAILDLTLAQDLLLLSDNGGEPEV	
SWYHRVRLLRQAEMWGDLLDQGQLVFVEGRLEYRQWEREGEKRSELQIR	100
ADFLDPLDDRGKKRAEDSRGQPRRLRAALNQVFLMGNLTRDPELRYTPQGT	
AVARLGLAVNERRQGAEERTHFVEVQAWRDLAEWAAELRKGDGLFVIGRL	200
VNDSWTSSSGERRFQTRVEALRLERPTRGPAQACPGRNRNRSREVQTGGVD	
IDEGLEDFPPEEDLPF	266

FIG. 77

REPLACEMENT SHEET

75/83

AATTCGACATTTCAATTGAATCGTTTATTCCGCTTGAAAAAGAAGGCAA	
GTTGCTCGTTGATGTGAAAAGACCGGGGAGCATCGTACTGCAGGCGCGCT	100
TTTTCTCTGAAATCGTGAAAAAACTGCCGCAACAAACGGTGGAAATCGAA	
ACGGAAGACAACCTTTTGTACGATCATCCGCTCGGGGCACTCAGAATTCGG	200
CCTCAATGGGCTAAACGCCGACGAATATCCGCGCCTGCCGCAAATTGAAG	
AAGAAAACGTGTTTCAAATCCCGGCTGATTTATTGAAAACCGTGATTCGG	300
CAAACGGTGTTTCGCCGTTTCTACATCGGAAACGCGCCCAATCTTGACAGG	
TGTCAACTGGAAAGTTGAACATGGCGAGCTTGTCTGCACAGCGACCGACA	400
GTCATCGCTTAGCCATGCGCAAAGTGAAAATTGAGTCGGAAAATGAAGTA	
TCATACAACGTCGTCATCCCTGGAAAAAGTCTTAATGAGCTCAGCAAAAT	500
TTTGATGACGGCAACCACCCGGTGGACATCGTCATGACAGCCAATCAAG	
TGCTATTTAAGGCCGAGCACCTTCTCTTCTTTCCCGGCTGCTTGACGGC	600
AACTATCCGGGAGACGGCCCGCTTGATTCCAACAGAAAGCAAAACGACCAT	
GATCGTCAATGCAAAAGAGTTTCTGCAGGCAATCGACCGAGCGTCCTTGC	700
TTGCTCGAGAAGGAAGGAACAACGTTGTGAAACTGACGACGCTTCCTGGA	
GGAATGCTCGAAATTTCTTCGATTTCTCCGAGATCGGGAAAGTGACGGAG	800
CAGCTGCAAACGGAGTCTCTTGAAGGGGAAGAGTTGAACATTTCTGTTTCA	
CGCGAAATATATGATGGACGCGTTGCGGGCGCTTGATGGAACAGACATTT	900
CAAATCAGCTTCACTGGGGCCATGCGGCCGTTCTGTGCGCCCGCTTCA	
ACCGATTTCGATGCTTCAGCTCATTTTGCCGGTGAGAACATAT	992

FIG. 78

NSDISIIIESFIPLEKEGKLLVDVKRPGSIVLQARFFSEIVKKLPQQTVEI	
ETEDNFLTIIRSGHSEFRLNGLNADEYPRLPQIEEENVFQIPADLLKTVI	100
RQTVFAVSTSETRPILTGVDNWKVEHGELVCTATDSHRLAMRKVKIIESEN	
EVSYNVVI PGKSLNELSKIILDDGNHPVDIVMTANQVLFKAHLLFFSRL	200
LDGNYPETARLIPTESKTTMIVNAKEFLQAIDRASLLAREGRNNVVKLT	
LPGGMLEISSISPEIGKVTEQLQTESLEGEELNISFSAKYMMDALRALDG	300
TDIQISFTGAMRPFLRLHTDSMLQLILPVRTY	

FIG. 79

REPLACEMENT
SHEET

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ATGATTAACCGCGTCATTTTGGTCGGCAGGTAAACGAGAGATCCGGAGTT	
GCGTTACACTCCAAGCGGAGTGGCTGTTGCCACGTTTACGCTCGCGGTCA	100
ACCGTCCGTTTACAAATCAGCAGGGCGAGCGGGAAACGGATTTTATTCAA	
TGTGTCGTTTGGCGCCGCCAGGCGGAAAACGTCGCCAACTTTTGA AAAA	200
GGGGAGCTTGGCTGGTGTGTCGATGGCCGACTGCAAACCCGCAGCTATGAAA	
ATCAAGAAGGTCGGCGTGTGTACGTGACGGAAGTGGTGGCTGATAGCGTC	300
CAATTTCTTGAGCCGAAAGGAACGAGCGAGCAGCGAGGGGCGACAGCAGG	
CGGCTACTATGGGGATCCATTCCCATTTCGGGCAAGATCAGAACCACCAAT	400
ATCCGAACGAAAAAGGGTTTGGCCGCATCGATGACGATCCTTTCGCCAAT	
GACGGCCAGCCGATCGATATTTCTGATGATGATTTGCCGTTT	492

FIG. 80

MINRVILVGRLTRDPELRYTPSGVAVATFTLAVNRPFTNQSYENQEGRRV	
YVTEVVADSVQFLEPKGTSEQRGATAGGYQGERETDFIQCVVWRRQAEN	100
VANFLKKGSLAGVDGRLQTRGDPFPFGQDQNHQYPNEKGFGRIDDDPFAN	
DGQPIDISDDDLPF	164

FIG. 81

REPLACEMENT SHEET

77/83

ATGCTGGAACGCGTATGGGGAAACATTGAAAAACGGCGTTTTTCTCCCCT	
TTATTTATTATACGGCAATGAGCCGTTTTTATTAACGGAAACGTATGAGC	100
GATTGGTGAACGCAGCGCTTGGCCCCGAGGAGCGGGAGTGGAACCTGGCT	
GTGTACGACTGCGAGGAAACGCCGATCGAGGCGGCGCTTGAGGAGGCCGA	200
GACGGTGCCGTTTTTCGGCGAGCGGCGTGTCAATTCTCATCAAGCATCCAT	
ATTTTTTTACGTCTGAAAAAGAGAAGGAGATCGAACATGATTTGGCGAAG	300
CTGGAGGCGTACTTGAAGGCGCCGTCGCCGTTTTTCGATCGTCGTCTTTTT	
CGCGCCGTACGAGAAGCTTGATGAGCGAAAAAAATTACGAAGCTCGCCA	400
AAGAGCAAAGCGAAGTCGTCAATCGCCGCCCGCTCGCCGAAGCGGAGCTG	
CGTGCCCTGGGTGCGGCGCCGCATCGAGAGCCAAGGGGCGCAAGCAAGCGA	500
CGAGGCGATTGATGTCCTGTTGCGGCGGGCCGGGACGCAGCTTTCCGCCT	
TGGCGAATGAAATCGATAAATTGGCCCTGTTTGCCGGATCGGGCGGAACC	600
ATCGAGGCGGCGGCGGTTGAGCGGCTTGTCGCCCGCACGCCGGAAGAAAA	
CGTATTTGTGCTTGTCGAGCAAGTGGCGAAGCGCGACATTCCAGCAGCGT	700
TGCAGACGTTTTTATGATCTGCTTGAAAACAATGAAGAGCCGATCAAAATT	
TTGGCGTTGCTCGCCGCCCATTTCCGCTTGCTTTCGCAAGTGAAATGGCT	800
TGCCTCCTTAGGCTACGGACAGGCGCAAATTGCTGCGGCGCTCAAGGTGC	
ACCCGTTCCGCGTCAAGCTCGCTCTTGCTCAAGCGGCCCGCTTCGCTGAC	900
GGAGAGCTTGCTGAGGCGATCAACGAGCTCGCTGACGCCGATTACGAAGT	
GAAAAGCGGGGCGGTTCGATCGCCGGTTGGCCGTTGAGCTGCTTCTGATGC	1000
GCTGGGGCGCCCCGCCCGCGCAAGCGGGGCGCCACGGCCGGCGG	

FIG. 82

MLERVWGNIEKRRFSPLYLLYGNEPFLLTETYERLVNAALGPEEREWNLA	
VYDCEETPIEAALEEAEVPPFGERRVILIKHPYFFTSEKEKEIEHDLAK	100
LEAYLKAPSPFSIVVFFAPYEKLDERKKITKLAKEQSEVVIAAPLAEAE	
RAWVRRRIESQGAQASDEAIDVLLRRAGTQLSALANEIDKLALFAGSGGT	200
IEAAVERLVARTPEENVFVLVEQVAKRDIPAALQTFYDLLENNEEPIKI	
LALLAAHFRLLSQVKWLASLGYGQAQIAAALKVHPFRVKLALAQAARFAD	300
GELAEAINELADADYEVKSGAVDRRLAVELLMLRWGARPAQAGRHGR	

FIG. 83

REPLACEMENT
SHEET

78/83

ATGCGATGGGAACAGCTAGCGAAACGCCAGCCGGTGGTGGCGAAAATGCT	
GCAAAGCGGCTTGGA AAAAGGGCGGATTTCTCATGCGTACTTGTTTGAGG	100
GGCAGCGGGGGACGGGCAAAAAGCGGCCAGTTTGTTGTTGGCGAAACGT	
TTGTTTTGTCTGTCCCCAATCGGAGTTTCCCCGTGTCTAGAGTGCCGCAA	200
CTGCCGGCGCATCGACTCCGGCAACCACCCTGACGTCCGGGTGATCGGCC	
CAGATGGAGGATCAATCAAAAAGGAACAAATCGAATGGCTGCAGCAAGAG	300
TTCTCGAAAACAGCGGTGCGAGTCGGATAAAAAAATGTACATCGTTGAGCA	
CGCCGATCAAATGACGACAAGCGCTGCCAACAGCCTTCTGAAATTTTTGG	400
AAGAGCCGCATCCGGGGACGGTGCGCGGTATTGCTGACTGAGCAATACCAC	
CGCCTGCTAGGGACGATCGTTTCCCGCTGTCAAGTGCTTTCGTTCCGGCC	500
GTTGCCCGCCGGCAGAGCTCGCCCAGGGACTTGTCGAGGAGCACGTGCCGT	
TGCCGTGTCGCGCTGTTGGCTGCCCATTGACAAACAGCTTCGAGGAAGCA	600
CTGGCGCTTGCCAAAGATAGTTGGTTTGCCGAGGCGCGAACATTAGTGCT	
ACAATGGTATGAGATGCTGGGCAAGCCGGAGCTGCAGCTTTTGTTTTTCA	700
TCCACGACCGCTTGTTTCCGCATTTTTTTGAAAGCCATCAGCTTGACCTT	
GGA CTG	757

FIG. 84

MRWEQLAKRQPVVAKMLQSGLEKGRISHAYLFEGQRTGKKAASLLAKR	
LFCLSPIGVSPCLECRNCRRIDSGNHPDVRVIGPDGGSIKKEQIEWLQQE	100
FSKTAVESDKKMYIVEHADQMTTSAANSLLKFLEEPHPGTVAVLLTEQYH	
RLLGTI VSRCQVLSFRPLPPAELAQGLVEEHVPLPLALLAAHLTNSFEEA	200
LALAKDSWF AEARTLVLQWYEMLGKPELQLLFFIHDRLFPHFLESHQLDL	
GL	252

FIG. 85

REPLACEMENT SHEET

79/83

GTGGCATAACCAAGCGTTATATCGCGTGTTTCGGCCGCAGCGCTTTGCGGA	
CATGGTCGGCCAAGAACACGTGACCAAGACGTTGCAAAGCGCCCTGCTTC	100
AACATAAAATATCGCACGCTTACTTATTTTCCGGCCCGCGCGGTACAGGA	
AAAACGAGCGCAGCGAAAATTTTCGCCAAGGCGGTCAACTGTGAACAGGC	200
GCCAGCGGCGGAGCCATGCAATGAGTGTCCAGCTTGCCTCGGCATTACGA	
ATGGAACGGTTCCTGATGTGCTGGAATTTGACGCTGCTTCCAACAACCGC	300
GTCGATGAAATTCGTGATATCCGTGAGAAGGTGAAATTTGCGCCAACGTC	
GGCCCCGTACAAAGTGTATATCATCGACGAGGTGCATATGCTGTGATCG	400
GTGCGTTTAACGCGCTGTTGAAAACGTTGGAGGAGCCGCCGAAACACGTC	
ATTTTCATTTTGGCCACGACCGAGCCGCACAAAATTCGGCGACGATCAT	500
TTCCCGCTGCCAACGGTTCGATTTTTCGCCGCATCCCGCTTCAGGCGATCG	
TTTCACGGCTAAAGTACGTGCAAGCGCCCAAGGTGTCGAGGCGTCAGAT	600
GAGGCATTGTCCGCCATCGCCCGTGCTGCAGACGGGGGGATGCGCGATGC	
GCTCAGCTTGCTTGATCAAGCCATTTCTGTTTCAGCGACGGGAAACTTCGGC	700
TCGACGACGTGCTGGCGATGACCGGGGCTGCATCATTTGCCGCCTTATCG	
AGCTTCATCGAAGCCATCCACCGCAAAGATACAGCGGCGGTTCTTCAGCA	800
CTTGGAACGATGATGGCGCAAGGGAAAGATCCGCATCGTTTGGTTGAAG	
ACTTGATTTTGTACTATCGCGATTTATTGCTGTACAAAACCGCTCCCTAT	900
GTGGAGGGAGCGATTCAAATTGCTGTGCTTGACGAAGCGTTCACTTCACT	
GTCCGAAATGATTCCGGTTTCCAATTTATACGAGGCCATCGAGTTGCTGA	1000
ACAAAAGCCAGCAAGAGATGAAGTGGACAAACCACCCGCGCCTTCTGTTG	
GAAGTGGCGCTTGTGAAACTTTGCCATCCATCAGCCGCCGCCCGCTCGCT	1100
GTCGGCTTCCGAGTTGGAACCGTTGATAAAGCGGATTGAAACGCTGGAGG	
CGGAATTGCGGCGCCTGAAGGAACAACCGCCTGCCCTCCGTGACCGCC	1200
GCGCCGGTGAAAAAACTGTCCAAACCGATGAAAACGGGGGGATATAAAGC	
CCCGGTTGGCCGCATTTACGAGCTGTTGAAACAGGCGACGCATGAAGATT	1300
TAGCTTTGGTGAAAGGATGCTGGGCGGATGTGCTCGACACGTTGAAACGG	
CAGCATAAAGTGTGCGACGCTGCCTTGCTGCAAGAGAGCGAGCCGGTTGC	1400
AGCGAGCGCCTCAGCGTTTGTATTAAATTCAAATACGAAATCCACTGCA	
AAATGGCGACCGATCCCACAAGTTCGGTCAAAGAAAACGTCGAAGCGATT	1500
TTGTTTGAGCTGACAAACCGCCGCTTTGAAATGGTAGCCATTCCGGAGGG	
AGAATGGGGAAAAATAAGAGAAGAGTTCATCCGCAATAAGGACGCCATGG	1600
TGGAAAAAAGCGAAGAAGATCCGTTAATCGCCGAAGCGAAGCGGCTGTTT	
GGCGAAGAGCTGATCGAAATTAAAGAA	1677

FIG. 86

REPLACEMENT
SHEET

80/83

VAYQALYRVFRPQRFADMVGQEHVTKTLQSALLQHKISHAYLFSGPRGTG	
KTSAAKIFAKAVNCEQAPAAEPCNECPACLGITNGTVPDVLEIDAASNNR	100
VDEIRDIREKVKFAPTSARYKVYIIDEVHMLSIGAFNALLKTLEPPKHV	
IFILATTEPHKIPATIIISRCQRFDFRRIPLQAIIVSRLKYVASAQGVEASD	200
EALSAIARAADGGMRDALSLLDQAI SFSDGKLRLDDVLAMTGAASFAALS	
SFIEAIHRKDTAAVLQHLETMMAQGKDPHRLVEDLILYYRDLLLYKTAPY	300
VEGAIQIAVVDEAFTSLSEMIPVSNLYEAI ELLNKSQQEMKWTNHPRLLL	
EVALVKLCHPSAAAPSL SASELEPLIKRIETLEAELRRLKEQPPAPPSTA	400
APVKKLSKPMKTGGYKAPVGRIYELLKQATHEDLALVKGWADVLDTLKR	
QHKVSHAALLQESEPVAASASAFVLKFKYEIHCKMATDPTSSVKENVEAI	500
LFELTNRRFEMVAIPEGEWGKIREEFIRNKDAMVEKSEEDPLIAEAKRLF	
GEELIEIKE	559

FIG. 87

REPLACEMENT SHEET

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ATGGTGACAAAAGAGCAAAAAGAGCGGTTTCTCATCCTGCTTGAGCAGCT	
GAAGATGACGTCGGACGAATGGATGCCGATTTTTCGTGAGGCAGCCATTC	100
GCAAAGTCGTGATCGATAAAGAGGAGAAAAGCTGGCATTTTTATTTTCAG	
TTCGACAACGTGCTGCCGGTTCATGTATACAAAACGTTTGCCGATCGGCT	200
GCAGACGGCGTTCCGCCATATCGCCGCCGTCCGCCATACGATGGAGGTCG	
AAGCGCCGCGCGTAAGTGAAGGCGGATGTGCAGGCGTATTGGCCGCTTTGC	300
CTTGCCGAGCTGCAAGAAGGCATGTGCGCCGCTTGTCGATTGGCTCAGCCG	
GCAGACGCCTGAGCTGAAAGGAAACAAGCTGCTTGTCGTTGCCCGCCATG	400
AAGCGGAAGCGCTGGCGATCAAACGGCGGTTCCGCCAAAAAATCGCTGAT	
GTGTACGCTTCGTTTGGGTTTCCCCCCTTCAGCTTGACGTCAGCGTCGA	500
GCCGTCCAAGCAAGAAATGGAACAGTTTTTGGCGCAAAAACAGCAAGAGG	
ACGAAGAGCGAGCGCTTGCTGTACTGACCGATTTAGCGAGGGAAGAAGAA	600
AAGGCCGCGTCTGCGCCGCCGTCCGGTCCGCTTGTCATCGGCTATCCGAT	
CCGCGACGAGGAGCCGGTGCGGCGGCTTGAAACGATCGTCGAAGAAGAGC	700
GGCGCGTCGTTGTGCAAGGCTATGTATTTGACGCCGAAGTGAGCGAATTA	
AAAAGCGGCCGCACGCTGTTGACCATGAAAATCACAGATTACACGAATC	800
GATTTTAGTCAAAATGTTCTCGCGCGACAAAGAGGACGCCGAGCTTATGA	
GCGGCGTCAAAAAGGCATGTGGGTGAAAGTGCGCGGCAGCGTGCAAAAC	900
GATACGTTTCGTCCGTGATTTGGTCATCATCGCCAACGATTTGAACGAAAT	
CGCCGCAACGAACGGCAAGATACGGCGCCGGAAGGGGAAAAGAGGGTCTG	1000
AGCTCCATTTGCATACCCCGATGAGCCAAATGGACGCGGTCACCTCGGTG	
ACAAAATCATTGAGCAAGCGAAAAAATGGGGGCATCCGGCGATCGCCGT	1100
CACCGACCATGCCGTTGTTTCAGTCGTTTCCGGAGGCCTACAGCGCGGCGA	
AAAAACACGGCATGAAGGTCATTTACGGCCTTGAGGCGAACATCGTCGAC	1200
GATGGCGTGCCGATCGCCTACAATGAGACGCACCGCCGTCTTTCGGAGGA	
AACGTACGTCGTCTTTGACGTCGAGACGACGGGCCTGTGCGCTGTGTACA	1300
ATACGATCATTGAGCTGGCGGCGGTGAAAGTGAAAGACGGCGAGATCATC	
GACCGATTTCATGTCGTTTGCCAACCCTGGACATCCGTGTCGGTGACAAC	1400
GATGGAGCTGACTGGGATCACCGATGAGATGGTGAAAGACGCCCCGAAGC	
CGGACGAGGTGCTAGCCCGTTTTTGTGACTGGGCGGCGATGCGACGCTT	1500
GTTGCCACAAACGCCAGCTTTGACATCGGTTTTTTAAACGCGGGCCTCGC	
TCGCATGGGGCGCGGCAAAATCGCGAATCCAGTCATCGATACGCTCGAGC	1600
TGGCCCGTTTTTTTATACCCGGATTTGAAAAACCATCGGCTCAATACATTG	
TGCAAAAAATTTGACATTGAATTGACGCAGCATCACCGCGCCATCTACGA	1700
CGCGGAGGCGACCGGGCATTTGCTTATGCGGCTGTTGAAGGAAGCGGAAG	
AGCGCGGCATACTGTTTCATGACGAATTAAACAGCCGCACGCACAGCGAA	1800
GCGTCCATATCGGCTTGCGCGCCCGTTCCATGTGACGCTGTTGGCGCAAAA	
CGAGACTGGATTGAAAAATTTGTTCAAGCTTGTTGTCATTGTCGCACATTC	1900
AATATTTTACCGTGTGCCGCGCATCCCGCGCTCCGTGCTCGTCAAGCAC	
CGCGACGGCCTGCTTGTCGGCTCGGGCTGCGACAAAGGAGAGCTGTTTGA	2000
CAACTTGATCCAAAAGGCGCCGGAAGAAGTCGAAGACATCGCCCGTTTTTT	
ACGATTTTCTTGAAGTGCATCCGCCGACGTGTACAAGCCGCTCATCGAG	2100
ATGGATTATGTGAAAGACGAAGAGATGATCAAAAACATCATCCGCAGCAT	
CGTCGCCCTTGGTGAGAAGCTTGACATCCCGGTTGTCGCCACTGGCAACG	2200

FIG. 88A

REPLACEMENT SHEET

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TCCATTACTTGAACCCAGAAGATAAAATTTACCGGAAAATCTTAATCCAT	
TCGCAAGGCGGGGCGAATCCGCTCAACCGCCATGAACTGCCGGATGTATA	2300
TTTCCGTACGACGAATGAAATGCTTGACTGCTTCTCGTTTTTAGGGCCGG	
AAAAAGCGAAGGAAATCGTCGTTGACAACACGCAAAAAATCGCTTCGTTA	2400
ATCGGCGATGTCAAGCCGATCAAAGATGAGCTGTATACGCCGCGCATTGA	
AGGGGCGGACGAGGAAATCAGGGAAATGAGCTACCGGCGGGCGAAGGAAA	2500
TTTACGGCGACCCGTTGCCGAAACTTGTTGAAGAGCGGCTTGAGAAGGAG	
CTAAAAAGCATCATCGGCCATGGCTTTGCCGTCAATTTATTTGATCTCGCA	2600
CAAGCTTGTGAAAAAATCGCTCGATGACGGCTACCTTGTCGGGTTCGCGCG	
GATCGGTTCGGCTCGTCGTTTGTTCGCGACGATGACGGAAATCACCGAGGTC	2700
AATCCGCTGCCGCCGCATTACGTTTGCCCGAAGTGAAGCATTTCGGAGTT	
CTTTAACGACGGTTCAGTCGGCTCAGGGTTTGATTGCGCGGATAAAAACT	2800
GCCCCGCGATGTGGGACGAAATACAAGAAAGACGGGCACGACATCCCGTTT	
GAGACGTTTCTCGGCTTTAAAGGCGACAAAGTGCCGGATATCGACTTGAA	2900
CTTTTCCGGCGAATACCAGCCGCGCGCCCACTATACGAAAGTGCTGT	
TTGGCGAAGACAACGTCTACCGCGCCGGGACGATTGGCACGGTCGCTGAC	3000
AAAACGGCGTACGGATTTGTCAAAGCGTATGCGAGCGACCATAACTTAGA	
GCTGCGCGGCGCGGAAATCGACGGCTCGCGGCTGGCTGCACCGGGGTGAA	3100
GCGGACGACCGGGCAGCATCCGGGCGGCATCATCGTCGTCCCGGATTATA	
TGGAAATTTACGATTTTACGCCGATTCAATATCCGGCCGATGACACGTCC	3200
TCTGAATGGCGGACGACCCATTTGACTTCCATTCGATCCACGACAATTT	
GTTGAAGCTCGATATTCTCGGGCACGACGATCCGACGGTCATTTCGCATGC	3300
TGCAAGATTTAAGCGGCATCGATCCGAAAACGATCCCGACCGACGACCCG	
GATGTGATGGGCATTTTTCAGCAGCACCGAGCCGCTTGCGCTTACGCCGGA	3400
GCAAATCATGTGCAATGTTCGGCACGATCGGCATTCCGGAGTTTGGCACGC	
GCTTCGTTTCGGCAAATGTTGGAAGAGACAAGGCCAAAAACGTTTTCCGAA	3500
CTCGTGCAAATTTCCGGCTTGTCGCACGGCACCGATGTGTGGCTCGGCAA	
CGCGCAAGAGCTCATTCAAACGGCACGTGTACGTTATCGGAAGTCATCG	3600
GCTGCCGCGACGACATTATGGTCTATTTGATTTACCGCGGGCTCGAGCCG	
TCGCTCGCTTTTAAAATCATGGAATCCGTGCGCAAAGGAAAAGGCTTAAC	3700
GCCGGAGTTTGAAGCAGAAATGCGCAAACATGACGTGCCGGAGTGGTACA	
TCGATTCATGCAAAAAAATCAAGTACATGTTCCCGAAAGCGCACGCCGCC	3800
GCCTACGTGTTAATGGCGGTGCGCATCGCCTACTTTAAGGTGCACCATCC	
GCTTTTGTATTACGCGTCGTACTTTACGGTGCGGGCGGAGGACTTTGACC	3900
TTGACGCCATGATCAAAGGATCACCCGCCATTTCGCAAGCGGATTGAGGAA	
ATCAACGCCAAAGGCATTCAGGCGACGGCGAAAGAAAAAAGCTTGCTCAC	4000
GGTTCTTGAGGTGGCCTTAGAGATGTGCGAGCGCGGCTTTTCCTTTAAA	
ATATCGATTTGTACCGCTCGCAGGCGACGGAATTCGTCATTGACGGCAAT	4100
TCTCTCATTCCGCCGTTCAACGCCATTCCGGGGCTTGGGACGAACGTGGC	
GCAGGCGATCGTGCGCGCCCGCGAGGAAGGCGAGTTTTTGTGCAAGGAGG	4200
ATTTGCAACAGCGCGGCAAATTGTGCAAAACGCTGCTCGAGTATCTAGAA	
AGCCGCGGCTGCCTTGACTCGCTTCCAGACCATAACCAGCTGTCGCTGTT	4300

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FIG. 88B

REPLACEMENT SHEET

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MVTKEQKERFLILLEQLKMTSDEWMPHFREAAIRKVVIDKEEKSWHIFYFQ	
FDNVLPVHVYKTFADRLQTAFRHIAAVRHTMEVEAPRVTEADVQAYWPLC	100
LAELQEGMSPLVDWLSRQTPELKGNKLLVVARHEAEALAIKRRFAKKIAD	
VYASFGFPPLQLDVSVEPSKQEMEQLAQKQOEDEERALAVLTDLAREEE	200
KAASAPPSGPLVIGYPIRDEEPPVRRLETIVEEERRVVVQGYVFDAEVSEL	
KSGRTLTLTKITDYNLSILVKMFSRDKEDAELMSGVKKGMWVKVRGSVQN	300
DTFVRDLV I IANDLNEIAANERQDTAPEGEKRVELHLHTPMSQMDAVTSV	
TKLIEQAKKWGHPAIAVTDHAVVQSFPEAYSAAKKHGMKVIYGLEANIVD	400
DGVPIAYNETHRRLSEETYVVFVETTGLSAVYNTIIELAAVKVKDGEII	
DRFMSFANPGHPLSVTTMELTGITDEMVKDAPKPDEVLARFVDWAGDATL	500
VAHNASFDIGFLNAGLARMGRGKIANPVIDTLELARFLYPDLKNHRLNTL	
CKKFDIELTQHHRAIYDAEATGHLLMRLLEAEERGILFHDDELNSRTHSE	600
ASYRLARPFHVTLTLLAQNETGLKNLFLVSLSHIQYFHRVPRIPRSVLVKH	
RDGLLVGSGCDKGELFDNLIQKAPEEVEDIARFYDFLEVHPPDVYKPLIE	700
MDYVKDEEMIKNIIRSIVALGEKLDIPVVATGNVHYLNPEDKIYRKILIH	
SQGGANPLNRHELDPVYFRTTNEMLDCFSFLGPEKAKEIIVDNTQKIASL	800
IGDVKPIKDELYTPRIEGADEEIREMSYRRAKEIYGDPLPKLVEERLEKE	
LKSIIGHGFAVIYLI SHKLVKKSLDDGYLVGSRGSGVSSSFVATMTEITEV	900
NPLPPHYVCPNCKHSEFFNDGSGVSGFDLPDKNCPRCGTTYKKDGHDI PF	
ETFLGFKGDKVPDIDLNFSGEYQPRAHNYTKVLFGEDNVYRAGTIGTVAD	1000
KTAYGFVKAYASDHNLELRGAEIDLAAGCTGVKRTTGQHPGGIIVVPDYM	
EIYDFTPIQYPADDTSSSEWRTHFDFHSHIDNLLKLDILGHDDPTVIRML	1100
QDLSGIDPKTIPTDDPDVMGIFSSTEPLGVTPEQIMCNVGTIGIPEFGTR	
FVRQMLEETRPKTFSELVQISGLSHGTDVWLGN AQELIQNGTCTLSEVIG	1200
CRDDIMVYLIYRGLEPSLAFKIMESVRKGKGLTPEFEAEMRKHDVPEWYI	
DSCKKIKYMFPAHAAAYVLM AVRIAYFKVHHPLLYYASYFTVRAEDFDL	1300
DAMIKGSPAIRKRIEEINAKGIQATAKEKSLTVLEVALEM CERGFSFKN	
IDLYRSQATEFVIDGNSLIPPFNAIPGLGTNVAQAIVRAREEGEFLSKED	1400
LQQRGKLSKTLLEYLESRGCLDSLPHNQLSLF	

FIG. 89